INDIAN EDUCATIONAL REVIEW

A Research Journal

Vol. XVI No. 3

July 1981

विद्यया ऽमृतमश्नुते

एन सी ई आर टी
NCERT

State Institute of Education
P.O. Baruipur, 24 Parganas,
West Bengal.

INDIAN EDUCATIONAL REVIEW

☐ **PURPOSE** *Indian Educational Review* is published quarterly in January, April, July and October, by the National Council of Educational Research and Training, New Delhi. The purpose of this journal is to provide a medium for dissemination of educational research and exchange of experience among research workers, scholars, teachers and others interested in educational research and related fields and professions.

☐ **SUBSCRIPTION** *India*: Single copy: Rs. 5.00. Annual Subscription: Rs. 18.00. *Other countries (By Sea Mail)*: Single copy: U.S. $ 1.50 or £ 0.50. Annual Subscription: U.S. $5.40 or £ 1.80. *(By Air Mail):* Single copy: U.S. $3.20 or £1.30. Annual Subscription: U.S. $ 12.00 or £ 5.00. Subscriptions should be addressed to Business Manager, Publication Department, NIE Campus, Sri Aurobindo Marg, New Delhi 110016. Single copies are available at this address or from approved agents.

☐ **CONTRIBUTIONS** *Indian Educational Review* invites papers on or pertaining to educational research with emphasis on research problems in Indian education. The editors entertain the following types of material:

1. Papers that contain original thinking in education or educational research.
2. Papers that make a significant contribution towards developing a theory.
3. Papers that summarize and discuss an outstanding study or a piece of educational research.
4. Papers that review significant research in important areas.
5. Letters to the Editor on important research problems.

The emphasis is on categories 2, 3, 4 and 5. Ordinarily, a paper is not accepted if it has appeared in print or in any form elsewhere. Exceptions may be made for contributions which the General Editor

□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ *(Contd. on cover iii)*

☐ **IER TEAM**

General Editor	R. P. SINGH
Assistant Editor	J. P. SHARMA
Assistant Production Officer	S. K. SHAARM
Production Assistant	KALYAN BANERJEE

INDIAN EDUCATIONAL REVIEW

VOLUME SIXTEEN NUMBER THREE JULY 1981

CONTENTS

22/1/82

State Institute of Education
P.O. Banipur, 24 Parganas,
West Bengal.

Research Papers

Some Innovations for the Improvement of Examinations : An Empirical Study 1
LOKESH K. VERMA

Innovative Proneness in the Secondary Teachers' Training Colleges 14
B. R. PANCHAL, D. R. DORJI

Development of an Environmental Awareness Test 21
A. B. SAXENA, V. G. JADHAO, J. S. RAJPUT

Research on Classroom Climate 27
L. P. SINGH

Affective Tone in the Primary Classroom 35
(Smt.) J. K. PILLAI

Self-Concept of Harijan Students and Attitudes of Other Students towards Them 44
HARIBHAI G. DESAI, D. A. UCHAT

Effect of Varying Sources of Feedback upon the General Teaching Competence of Student-Teachers under Microteaching Situation 51
VIMLA MAHESH, J. P. SRIVASTAVA, SHEELA SINGH

Typical Patterns of Verbal Behaviours of Successful Secondary School English Teachers 59
N. N. PANGOTRA

Effectiveness of Skill-Based Instructional Material Synchronized with Microteaching Approach in the Acquisition of the Skill of Illustrating with Examples 69
SNEHA JOSHI, B. N. BISWAL

Ph.D. Theses Abstracts

Impact of Social Deprivation on Cognitive Styles of Primary School Children 75
(Smt.) M. PUSHPA

Concept of Speed : A Development-cum-Training Study 79
UPDESH KAUR BEVLI

A Critical Evaluation of School Textbook Improvement Programme in India 82
I. S. CHAUDHRI

A Study of Some of the Social-Psychological Factors Associated with Vocational Development 90
BISWANATH ROY

The Effect of Knowledge of Results on Achievement of School Subjects in Relationship with Certain O-Variables 95
JAMNALAL BAYTI

Research Notes

A Study of the Examination System 100
RAMESH CHANDRA SHARMA

Teacher-Educator Competency in Creativity 103
M. K. RAINA, V. K. RAINA

Effective Cost of Education in Karnataka 109
MALATHI SOMAIAH

Approaches for the Measurement of Self-Concept : An Introduction 114
R. K. SARASWAT, J. S. GAUR

The Effect of Perental Deprivation on Personality Adjustment : A Study of the Denotified Tribal Students 120
MOHD. AIJAZ KHAN

Book Reviews

The Search for Satori and Creativity 127
S. N. TRIPATHI

Thinking Thursdays 129
PRAMILA AHUJA

□

Some Innovations for the Improvement of Examinations

An Empirical Study

LOKESH K. VERMA
Department of Education, Kurukshetra University

By now it is evident to everybody that our present system of examinations is highly defective and needs improvement. Some remedies, based mostly on theoretical considerations, have been suggested and discussed in a number of conferences and seminars by the educationists. But this approach does not solve many problems ; the approach must be through research and experimentation wherein a problem can be studied deeply from a practical point of view. So far only a few experiments have been carried out to test the empirical validity of the measures that have been thought of. Hence, the author of this paper decided to do some experimental testing of certain well-known innovations proposed by different people on examination reforms and the results of the experiments have been narrated and discussed below.

---

*Paper presented in the seminar 'Researches in Examinations' organized by NCERT and held at Dargeeling from 23 to 27 October 1978

The author is grateful to Dr. H.C. Sinha, Retd. Professor of Education, for his able guidance.

1. Improvement of the Essay-type Question Paper

There has been a consensus that the written examination in vogue at all the stages of education suffers from many drawbacks. Most of the drawbacks of traditional written examinations are too well known to us now. The questions set in a paper are often vague and admit of many possible answers. Most of them demand sheer memorization of facts without involving any critical thinking, interpretation or application. Some stock terms do not provide clear direction to the students regarding the length and scope of answers. All this results into subjective interpretation of questions and vague answering on the part of the examiners. Consequently, the drawbacks in the questions set reduce the reliability and the validity of our written examinations. It is, therefore, imperative to make certain improvements in the setting of question papers, scoring procedure, etc. The Education Commission (1966) was also of the opinion that no major break-through towards improvement of examinations is possible unless the nature of the questions asked is improved. The researcher took up a question paper already set by a university in a previous year and tried to improve it. The questions were reframed in simple, clear and precise language so that the intent and meaning of the questions may be communicated to all the examiners and the examinees. Moreover, the general instructions issued to the examinees in the form of note, etc. were modified by instructing the examinees specifically not to write anything more than what had been asked in the question as they are often tempted to do. The questions demanding long answers were also broken up, and weights were assigned to different sub-questions in consultation with some experienced teachers. Two equivalent groups of 50 students each were taken for comparing the assessments through the original examination paper and the improved one. The answer-scripts of the students of the two groups were evaluated by five approved examiners each of the Jammu University. Marks awarded by the five examiners of each group were correlated in different pair combinations (13 pairs in all for each group) and averaged by Z-transformation (Table 1). This was done to compare the inter-examiner reliabilities of the two types of papers. The significances of the difference between the average Z-coefficients was also tested as shown in Table 1.

From Table 2 it was found that the average coefficient of correlation (r) between the marks awarded by the group of examiners, employing original examination procedure was 0.65, while the corresponding value for improved procedure was found to be 0.84. Further, the difference

TABLE 1

TRANSFORMATION OF PEARSON'S 'r's TO CORRESPONDING FISHER'S 'Z' COEFFICIENTS

Sr. No.	Pairs	Improved Exam. Paper		Original Exam. Paper	
		r_1	Z_1	r_2	Z_2
1.	I *v.* II	0.93	1.66	0.76	1.00
2.	I *v.* III	0.92	1.59	0.72	0.91
3.	I *v.* IV	0.85	1.26	0.65	0.77
4.	I *v.* V	0.78	1.05	0.44	0.47
5.	II *v.* III	0.92	1.59	0.67	0.81
6.	II *v.* IV	0.81	1.13	0.83	1.19
7.	II *v.* V	0.73	0.93	0.56	0.63
8.	III *v.* IV	0.78	1.05	0.62	0.73
9.	III *v.* V	0.74	0.95	0.50	0.55
10.	IV *v.* V	0.71	0.89	0.54	0.60
	Mean	Z_1	1.21	Z_2	0.77

TABLE 2

TEST OF SIGNIFICANCE OF 'Z' VALUES BETWEEN IMPROVED QUESTION PAPER AND TRADITIONAL QUESTION PAPER

Z_1	Z_2	Z_1-Z_2	Z	*C.R.*	*Significance*
1.21	0.77	0.44	0.20	2.20	at .05 level

between the inter-examiner reliabilities came out to be significant at .05 level. Hence it can be inferred that mean Z_1 was significantly greater than Z_2. Thus we may say that as long as essay-type questions have to be used, for the sake of gradual transition or for testing in areas not easily amenable to assessment in any other manner, it will be imperative to improve the nature of question paper, which can be done on the lines indicated above. It is certain that when essay test is used with optimum efficiency and for carefully designed purposes many of its advantages will be realized reliably and validly.

2. Scheme of Options

Examinations should provide a common yardstick for all the students but unfortunately the provision of a large number of options in the question paper vitiates the whole process and comparability of the students on a common scale remain a pious hope. This practice gives the students the scope for selective study which is indeed detrimental to effective learning in the courses they undergo. So, options should be discouraged as far as possible. To avoid a sudden deviation from the tradition, some internal options may, however, be resorted to for the time being to reduce the dividends likely to accrue from selective reading.

In internal options, proper care has to be taken to balance the options within a question in terms of content of testing, instructional objectives, difficulty level and the length of the answers demanded. It was thought desirable by the investigator to see the effectiveness of the internal options in comparison to overall options by making an actual experiment. An attempt was made to study the difference in the average inter-examiner correlations of the awards in answer-scripts of question papers having overall options and internal options on the course prescribed in educational psychology for the B.Ed. examination of Kurukshetra University. For the external options, a question paper having 10 questions of short answer essay-type was set giving the choice of picking out any five questions, and the students were required to answer them in 1½ hours. After they had finished answering the five questions of their choice in 1½ hours, they were given another answer-book and asked to answer the remaining five questions in another 1½ hours. Another paper was set by putting the same questions in five pairs and providing internal choice only, that is, of answering one question out of each pair, and students of another batch were made to answer this question paper too in two lots as described above. Each set of answer-books (4 sets) was assessed and marked separately by three examiners each. The averages of the awards of the three examiners was taken as the score of the student for the half of the question paper. Then the correlation between the average scores of the students on their two answer-scripts was found, separately for candidates of overall options and of the options within the questions and the difference in the two 'r's was assessed and tested for significance through Z-transformation. The average correlation for overall options was 0.27 and for options within the questions, it was 0.68. On testing, it was found that the difference in average correlation was significant at .05 level.

TABLE 3

TEST OF SIGNIFICANCE OF COEFFICIENT OF CORRELATION BETWEEN EACH HALF OF OVERALL OPTIONS AND OPTIONS WITHIN THE QUESTIONS

Type		*r*	*S. Ed.*	*C.R.*	*Significance*
Internal	I Half II Half	0.68	0.20	2.75	at .05 level
External	I Half II Half	0.27			

It may be further observed that the number of different combinations of questions that are selected by the candidates gets much reduced when the options are internal, i.e. if the candidates are required to answer five out of ten questions, the number of the combinations of five questions will be 252 in free-choice questions but in internal choice, the combinations for attempting five questions will be 32. As in all the sub-sets the questions get equally balanced with respect to subject-matter, objectives. etc. the preference of the examiners regarding the value or weights of the different questions do not vitiate the assessment. Hence, it is confirmed experimentally that if options are to be given, options within the questions have to be preferred, because they give a better picture of the relative studying of the students in a group.

3. Marking v. Grading

The reliability and validity of essay-type examinations suffer all the more when the examiner attempts to discriminate on a fine scale of 51 or 101 points, hence, discrimination ought to be made in much broader bands, for this, as well as for the sake of comparability between scores in different subjects.

(*i*) In this study the researcher wished to compare the inter-examiner reliability in the evaluation of examination papers on five and seven-point letter grades and on the numerical scale, especially in the former case. Fifty assorted B.A. (history) answer-scripts were got issued from Kurukshetra University. It was seen that these 50 scripts covered a wide range of ability. The scripts were got evaluated on five-point scale, seven-point scale and a numerical scale of 101 points, after covering the old awards with black paper. Five examiners were set on the job for each type of evaluation. The examiners were requested not to put any mark on the scripts but were provided with blank sheets, and instructions regarding the meanings of the different letter grades were given. Examiners using letter grades were requested to award the grades question-wise in each script. The question-wise awards in each script were averaged for overall grade by the researcher himself by transformation of letter grades in numerical values. After the evaluations were complete, coefficients of contingency were calculated for awards of pairs of the examiners of those papers which were assessed by letter grading, and the contingency coefficients were boosted for 'r' equivalents according to the table given by Guilford, and averaged through Z-transformation. Direct 'r' correlations were computed for the papers which were assessed numerically, and averaged. The average correlations for all the three types of assessment were compared and the differences tested for significance through Z-transformation. The values obtained are given in Tables 4, 5 and 6.

TABLE 4

COMPARISON OF FIVE-POINT SCALE WITH NUMERICAL MARKING

I	*II*	*S. Ed.*	*C.R.*	*Significance*
5-point	101-point	.20	I v. II	.05
.74	.37		2.80	Sig.

TABLE 5

COMPARISON OF SEVEN-POINT SCALE WITH NUMERICAL MARKING

I	*II*	*S. Ed.*	*C.R.*	*Significance*
7-point	101-point	.20	I v. II	.05
0.70	0.37		2.35	Sig.

TABLE 6

COMPARISON OF SEVEN-POINT SCALE WITH NUMERICAL MARKING

II	*II*	*S. Ed.*	*C.R.*	*Sig.*
7-point	5-point	.20	0	0.09
.74	.70		0.40	Not sig.

The average correlations between the letter grades on five-point and-sevenpoint differed significantly from numerical marking but there was no difference in two types of scales (five-point and seven-point). Both the scales seem to be alike for evaluation. The obvious conclusion is that there is not much to choose between five- and seven-point letter grades as far as inter-examiner reliability is concerned. Hence, the choice between the two will have to be made on some other considerations. The advocates of the numerical grades find fault with the letter grades in their not classifying candidates finely enough for admission to higher courses or for selections for jobs and this flaw gets heightened as we make the discrimination more and more crude by reducing the grade points. Hence, seven-point scale has to be preferred to five, especially when it does not confer any significant advantage with regard to inter-examiner reliability. Dandekar (1968) also recommends that we should split some of the five classes into seven or nine.

(*ii*) The next objective under this innovation was to compare script-wise letter-grade assessment. For this, the scripts were sent back after two months to the same examiners who had done letter-grading question-wise, for letter-grading script-wise on the same scale on which they had assessed previously and the coefficients of contingency between the letter grades awarded script-wise were computed, boosted up to 'r' values and averaged. The average correlations of script-wise assessment were compared with the average correlations of the question-wise assessment. The values are mentioned in Tables 7 and 8.

TABLE 7

AVERAGE CORRELATION AND THE DIFFERENCE IN QUESTION-WISE AND SCRIPT-WISE LETTER-GRADE MARKING ON FIVE-POINT SCALE

I	*II*	*S. Ed.*	*C.R.*	*Significance*
Question-wise	Script-wise		I *v.* II	.05 level
.74	.70	.20	0.40	Not sig.

TABLE 8

AVERAGE CORRELATION AND THE DIFFERENCE IN QUESTION-WISE AND SCRIPT-WISE LETTER-GRADE MARKING ON SEVEN-POINT SCALE

I	*II*	*S. Ed.*	*C.R.*	*Significance*
Question-wise	Script-wise		I *v.* II	.05 level
.70	.60	.20	.90	Not sig.

The values obtained in Tables 7 and 8 reveal that there is no significant difference in the average correlation of letter grades awarded question-wise and script-wise, that is, there is no significant difference in the two styles of evaluation. The choice between the two has to be made on some other consideration. If the examiners are allowed to do script-wise marking, there is a fear that the not-so-scrupulous ones may lighten their task by giving overall awards without going through the entire scripts. Hence, on this practical consideration the question-wise assessment should be preferred, when the overall assessment does not give a significantly better result with regard to inter-examiner reliability. Harper has also recommended the same on the basis of his experiment on numerical awards in question-wise and script-wise assessment.

4. Spot Evaluation

There is a feeling among people that the examiners looking into the scripts in the seclusion of their homes do not examine them with due care. Besides this, there is fear that the traditional method of head-examiners sending written instructions to the deputy head-examiner and the latter to the co-examiners may also leave many communication gaps. It also becomes difficult to ensure timely declaration of results due to a huge number of students appearing in the examination. Hence, some universities decided to invite examiners to the university centres for evaluating the answer-scripts on the spot. The merit of this type of evaluation cannot be denied as it ensures uniformity of conditions under which the scripts are marked. The head-examiner and other examiners are personally available on the spot for evolving common criteria for evaluation. On the other hand, it may be highly inconvenient to the examiners to forgo the home comforts and sit straight-jecketed for marking the allotted number of scripts within a specified period everyday and all this may lead to slipshod work. Hence, it was decided to gather opinions of examiners having experience of spot evaluation. For this, an attitude scale of nine categories was prepared by Thurstone's equal appearing interval method to assess the attitude of examiners towards spot evaluation. The scale was administered to 150 examiners, of science and arts subjects, who have had sufficient experience of spot evaluation at under-graduate and postgraduate levels. The examiners were chosen from the universities of Himachal Pradesh, Jammu, Meerut, Punjab and Kurukshetra. The scores on the basis of scale values were tabulated. The mean scale value of the whole group was 5.94, i.e. it fell near the upper limit of category VI, and showed a clear bias towards a favourable attitude, and was definitely above the category of indifference, viz. category V. The mean values of all the four groups as shown in Table 9 are all in category VI.

TABLE 9

MEAN ATTITUDE, SCORES ON SPOT EVALUATION

	Post-Graduate	*Under-Graduate*
Arts	5.92 (n=42)	5.97 (n=62)
Science	5.89 (n=20)	5.98 (n=22)

The fiduciary limits of the overall mean are as follows :

$$\begin{aligned}\text{Cl } .95 &= 5.94 \pm 0.73 \times 1.96 \\ &= 5.87 \text{———} 6.01\end{aligned}$$

To test the significance of difference in means of the two levels of the main effects of (*i*) examinations (under-graduate and postgraduate) and (*ii*) subjects (arts-science) and their interaction, analysis of variance (2×2) factorial design for unequal groups was made. The results are given in Table 10.

TABLE 10

RESULTS OF ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*p*
Levels of Exam. (A)	0.15	1	0.15	0.68	<1
Subject-Examiners (B)	0	1	0	—	—
A+B	0.24	1	0.24	1.09	$<.05$
Within	31.69	142	0.22	—	—

Table 10 reveals that the scores of the subjects in the four treatments, the main effects and the interaction were all found to be insignificant. Hence, it may be said that the examiners on comparison do not differ from each other in their attitude towards spot evaluation. They are all favourably inclined towards it, though the degree of favourableness is not much. The percentage of respondents agreeing with the different statements in the attitude inventory are given in Table 11.

TABLE 11

Sr. No.	*Statements*	*%age*
1.	It is speedy process of evaluation	92.47
2.	Physical inconvenience hampers the efficiency of the examiners in spot evaluation	49.32
3.	It affords opportunity to the examiners to consult the head-examiner on the spot	97.26
4.	Compulsion regarding number of scripts to be evaluated in each sitting unduly hastens the valuation	57.33
5.	Fixation of time schedule makes the spot-evaluation boring	52.74
6.	It facilitates the exchange of views among the examiners	86.99
7.	It is a mechanical and a less thoughtful process of evaluation	45.21
8.	It produces competition for hasty evaluation	54.79
9.	Examiners evaluate under certain psychological tensions	35.62
10.	Evaluation of criteria after common consultation among examiners makes it better coordinated	80.14
11.	Insincere examiners also improve in spot-evaluation	54.11
12.	It keeps the examiners away from home disturbances	47.95
13.	As spot-evaluation takes less time, the variability in the standard of the examiner from time to time is reduced	74.66
14.	Evaluation time is cut short at the cost of examinees	53.42
15.	If the paper-setter does not participate, the implications [of the questions are not properly visualized	46.58
16.	It is a big show without leading to any effective improvement	46.58
17.	It checks the leakage of awards	44.52
18.	It is a costly affair	31.51
19.	It makes the examiners more conscious about the awards they allot	26.71
20.	All universities and boards should introduce spot-evaluation	58.22

5. Open-Book Examinations

Open-book examinations are only possible when the questions rise above the memory level and test the higher abilities like application, analysis, critical thinking, interpretation, etc. so that the answers are not available in books directly. Ebel also agrees with this view. For measuring the abilities, an objective type test has been constructed in chemistry for under-graduate students and will be administered as an open-book test. This test was prepared for the full course of per-medical and non-medical examination (1978) of Kurukshetra University. The test comprised 50 items measuring all the higher abilities like analysis, application and critical thinking. The items were got checked by some experienced teachers. A scientific aptitude test by A.K.P. Sinha and L.N.K. Sinha was administered to serve as a criterion for the comparison of the merits of the measures of the open-book test and of achievements in the university examination of the previous year, because the real purpose of assessment in science should be the measurement of scientific aptitude. The two tests were administered simultaneously to 50 pre-medical/pre-engineering students.

The scores of the open-book examination and the scores of the students in university examination were correlated separately with the criterion test. The significance of the difference in the two correlations were also tested and the results are shown in Table 12.

TABLE 12

COEFFICIENT OF CORRELATION FOR OPEN-BOOK AND ESSAY-TYPE EXAMINATIONS WITH CRITERION

Type	*Criterion*	*N*	*r*	*S. Ed.*	*C.R.*	*Sig.*
Open-Book	Scientific	50	.73	.20	1.55	Not sig.
Essay-Type	Aptitude Test	50	.55			

Table 12 reveals that the coefficient of correlation between open-book and scientific aptitude test is 0.73 which is quite high and indicates a very satisfactory index of the relationship. It shows that those who possess scientific ability fair well in open-book examination too. The coefficient of correlation between scientific aptitude test and essay-type test is lower, i.e. 0.55, of course the difference between the two did not come out to be statistically significant. Though there is no difference between closed and open-book examinations, as far as the assessment and discrimination for scientific talent is concerned, yet the latter will have to be preferred for the sole reason that it will reduce copying to the minimum, an evil which is threatening our examination system the most.

6. Revaluation

There is a provision for evaluation in some universities. The author collected facts and figures of revaluation cases of postgraduate examination of 1977 from eight universities of Northern India, viz. Jammu, Himachal Pradesh, Punjabi, Punjab, Kurukshetra, Meerut, Lucknow and Allahabad and analysed them. The rules and regulations of 15 universities were also collected and compared for all the aspects of revaluation. The analysis revealed that there is no uniformity in the rules and regulations, and different rules may affect the same case differently.

In a few universities, it has been reported that the awards of the examiners differ so substantially that there are even cases getting two or more than two category jumps favourably and adversely. In Punjab University 15 students (3.19 per cent) who were first failing in the respective examination got second division marks on revaluation. In Kurukshetra and Allahabad universities there were two similar cases of the two categories, upward jump each whereas in Meerut and H.P. universities one case each has been reported to have come down from second division to fail category.

Another thing that needs attention is the variability in the procedure for arriving at the final score after evaluation which lead to different results. The result of an individual gets affected differently under different rules. So, the fate of a candidate depends on his being in one university or the other. In some cases, there were almost unbelievable discrepancies in the awards extending up to a difference of 40 per cent marks even in subjects like mathematics.

7. Internal Assessment

The system of external examination cannot work well unless it is accompanied by internal assessment which can serve as a corrective. Though the internal assessment should be more valid because of the evaluator having watched the work of the candidate more closely and for a longer period, yet the system has failed miserably because of human weaknesses. As we cannot afford to do away with internal assessment, research is required to suggest checks and balances to ensure its objectivity and impartiality.

The researcher tried to gather from the universities where internal assessment is in vogue, information regarding the criteria on which they are based, and separate scores of the candidates in external and internal examinations, in order to find out which set of criteria lead to better correlations between the two sets of scores.

In order to achieve the objective of the study, the investigator could procure scores of internal and external examinations separately for various courses of a few universities.

The scores for two types of examinations were collected for honours course of Utkal University, different subjects of M.Ed. course of the Jammu University, M.A. courses of Sardar Patel University and Bombay University and M.B.A. and B.E. courses of the Kurukshetra University. The correlations were found out between internal assessment and external examination scores.

The results revealed that internal assessment scores were highly correlated with external assessment of two of the universities where the number was small, in spite of the fact that the internal assessment besides scholastic achievement measures a few other dimensions also.

The above facts have been laid down as a contribution of the humble mite of the author to the considerations of the worth of the different innovations in examination reform.

References

Dandekar, V.M. Statistical reform of the system of evaluating results of mass conducted examinations. *Indian Educational Review*, 1968, 3 (1), 1-19

Ebel, R.L. Measuring educational achievement. New Delhi : Prentice Hall of India, Pvt. Ltd., 1966, 78-79

Harper, A.E. (Jr.) Essay type examinations : A proposal. *University Education*, Vol. 2, No. 2, 1963

Report of the Education Commission. Ministry of Education, Government of India, New Delhi, 1966

Verma, L.K. Internal vs. external choices in question-paper. *Journal of Indian Education* (accepted for publication in future issue). □

Innovative Proneness in the Secondary Teachers' Training Colleges

B.R. PANCHAL
D.R. DORJI

Department of Extension Services, Facutly of Education and Psychology, M.S. University of Baroda

On account of fast growth of population, a teacher has to take a class of more than 50 to 60 pupils and colleges of education are also flooded. Day to day too much knowledge will have to be given to too many pupils and the teacher will have to be in constant search of new and innovative ideas, techniques and methods of teaching. Education has not remained now a part-time activity, it has become a life-long service. Due to universal, compulsory and free primary education, education is now no more the monopoly of the elites, but it has extended to masses. The greater the number of children in the classroom, the greater is the scope of individual differences. Under these circumstances education will have to be learning-oriented rather than teaching-oriented. But, who will make education learning-oriented ? Obviously, the teachers. To make education learning-oriented, the teachers will have to change first. They will have to be educated first. Ultimately, this responsibility rests on the shoulders of teacher-educators. They themselves will have to be change-prone first. Now who is prone to change and who is not ! This will have to be located and dissonance of innovation will have to be diluted. To know this one should have a tool. So the author found it in the fitness of the things to devise a tool for locating innovation proneness and innovation dissonance in the teacher-educators of secondary teachers' training colleges of Gujarat.

Some Basic Concepts

At the outset some basic concepts, viz. innovation, innovativeness, innovative proneness, innovation dissonance need to be clarified.

Innovation : An innovation is taken to mean a significant change in educational objectives, curriculum content, teaching method, pupil grouping, staff deployment, resource utilization and the organization of the activities of the institution.

Innovativeness : The definition of innovativeness given by Rogers (1962) which runs as "the degree to which an individual is relatively earlier in adopting new ideas than the other methods of the social system" is worth adopting.

Innovative Proneness : It means the attitude towards new ideas and practices, a particular focus of interest which is the attitude of teacher-educators towards innovation in education.

Innovation Dissonance : It is the discrepancy between an individual's attitude towards an innovation and his decision to adopt or reject the innovation.

The tool developed by the author is also useful in locating 'innovation dissonance' in a person. Having known the innovation proneness or dissonance among his colleagues, the leader can initiate necessary action. Thus, the tool prepared by the author is of immense utility to the administrators-principals.

The Tool

The tool constructed and standardized by the author measures innovative proneness of the teacher-educators of the secondary teachers' training colleges of Gujarat. With few changes in the wordings of the statements, the tool can also be useful for measuring innovative proneness and innovative dissonance of school teachers.

The instrument developed by the investigator seeks to identify and quantify four aspects of teacher-educators' innovativeness :

1. Teacher-educators' expressed attitudes towards specific innovations and combinations of innovations, having regard to the potential cumulative effect of attitudes arising from past experiences with innovations.
2. Teacher-educators' general attitudes to change or their change-related values.

3. Teacher-educators' preferred behaviours in relation to their perception of attributes of innovations.
4. Teacher-educators' preferred behaviours in relation to their perception of the setting and circumstances in which innovations are introduced.

To explore the dimensionality of general change-related and innovation-specific attitudes and behaviours, four instruments were constructed : (*i*) Section I—The Inventory of Attitudes to Innovation (IAI). (*ii*) Section II—The Situational Characteristics Scales (SCS). (*ii*) Section II-B—The Innovation Characteristics Scales (ICS). (*iii*) Section III—The Change-Related Values Questionnaire (CVQ). (*iv*) Section IV—Biographical Data. The main components of the above scales are described here as under :

Section I : The IAI consists of seven components which refer to the attitudes towards innovation : (*i*) innovation in 'individualization,' (*ii*) innovations in 'curriculum organization', (*iii*) innovations in 'teaching-learning process', (*iv*) innovations in the use of 'teaching resources', (*v*) innovations in internal college organization', (*vi*) innovations oriented towards 'staff development', and (*vii*) innovations in college community relationship'.

Section II : It is related to the process of change in education which further depends on two points : (*i*) The situational characteristics, and (*ii*) The characteristics of the innovation.

Section II-A : The SC scale consists of three components : (*i*) Teacher-educators' perceptions of the degree and kind of administrative support provided for innovation in the college (administrative support), (*ii*) Teacher-educators' perceptions of the change-related norms and values of their colleagues (staff norms), and (*iii*) Teacher-educators' perceptions of the change-related norms and values of the educational system (system norms).

Section II B: The IC scale consists of five components : (*i*) Complexity—teacher-educators' perception of the complexity of the innovation, (*ii*) Compatibility—teacher-educators' perception of the compatibility of the innovations, (*iii*) Risk-taking—teacher-educators' perception of, degree of risk involved in adoption (riskness), (*iv*) Localiteness—perceived 'local' orientation of the innovation (localiteness), and (*v*) Cosmopoliteness—perceived 'cosmopoliteness' of the innovation.

Section III : The CVQ consists of the following six components :

(*i*) *Traditionalism* of the system refers to the extent of having traditional norms and modern norms.

(*ii*) *Progressivism* is the characteristics of a person who always looks for his progress.

(*iii*) *Dogmatism* is a variable representing a relatively closed belief system, a set of beliefs that are strongly held.

(*iv*) *Venturesomeness* is the characteristics of the person that leads him towards taking initiative in doing new things, always ready to carve new path.

(*v*) *Conservatism* : conservative people are not prone to change, they stick to already established norms.

(*vi*) *Change proneness* refers to the attitude of the person towards the change.

The components of the last section of the scale seem to be mutually inclusive ; they are all mutually inclusive to innovativeness.

Selection of the Items

Keeping in view all these components of Sections I, II and III, after the process of item analysis, the investigators selected total 150 items—30 items in Section I, 60 items in Section II and 60 items in Section III—showing various degrees of agreement or disagreement. The reliability of each section was found out by test retest method and split-half test method. The lest-retest correlations for total scores of each section are 0.89, 0.73 and 0.70 respectively. The reliability coefficient of each section by split-half test method are 0.90, 0.95 and 0.92 respectively. These proved that the questionnaire is reliable.

Validity was found out by (*i*) the content validity—as all the items of the tool have relied principally on the definitions of innovative proneness given by experts, (*ii*) the rating of the teacher-educators were correlated with the rating of the principals or heads or deans and the product-moment coefficient correlation between the two sets of scores was 0.77, (*iii*) item analysis was done by phi-coefficient formula and items were found valid showing high phi-values from 0.48 to 0.82. These proved that the inventory is valid. After the reliability and validity of the inventory, percentile norms with respect to each component of the three sections of the scale were established. Then the inventory was ready for the administration. It is named as 'innovative proneness scale for teacher-educators' (IPS) and consisted of 150 items.

After construction and standardization of the inventory, the tool was ready for administering the sample, as one of the objectives was to measure the innovative proneness of the teacher-educators of the secondary teachers' training colleges. The entire forty secondary teachers' training colleges of Gujarat were selected as a sample for the present study. All the teacher-educators of these colleges were given innovative proneness scale (IPS). Thus, the data was collected from 200 teacher-educators of the secondary teachers' training colleges of Gujarat.

The teacher-educators of all the secondary teachers' training colleges of Gujarat were asked to indicate their responses to each of 150 items on a six-point scale--strongly agree, agree, tend to agree, tend to disagree, disagree and strongly disagree—which were scored, 5, 4, 3, 2, 1 and 0, respectively. Inversely keyed items were scored 0, 1, 2, 3, 4, and 5, respectively.

Item scores for each respondent were summed to provide a global score ranging from 0 to 150 in Section I and from 0 to 300 in Section II and III, respectively. The total score was taken to yield a global measure of predisposition to adopt innovations. Thus, the responses were hand scored. Then the data was computerized to study (*i*) the mean scores of the innovative proneness and its twenty-one components. (*ii*) The innovative proneness scores of teacher-educators according to college, age, sex, teaching experience, academic qualifications, foreign visits, professional qualifications, mobility, inservice education, habits and professional satisfaction. (*iii*) Innovative proneness of teacher-educators of secondary teachers' training colleges of Gujarat. (*iv*) The factor analysis of the prepard scale. The mean, SDS and t-values of the collected data were found out. For studying this, the technique of 'significance of difference' between the means was employed. The intercorrelations among the twenty-one components of 'innovative proneness scale' are given and interpreted with the help of intercorrelation matrix.

Implications and Suggestions

The following four profiles throw light on the overall picture of the secondary teachers' training colleges of Gujarat in the context of 'innovative proneness of the teacher-educators of the colleges (four profiles—Nos. 1, 2, 3, 4, pages 9, 10, 11, 12). Profile 1 says that 22 colleges are above the mean on IAI scale and 18 colleges are below the mean. Profile 2 says that 20 colleges are above and exactly 20 colleges are below the mean on S and IC scale. Profile 3 gives 17 colleges above the mean and 23 colleges below the mean score on CRVQ scale. Profile 4 gives the comparison of two colleges with the Gujarat means on these three scales.

It has already been observed that about 50 per cent colleges are above the Gujarat means on all the three scales. This means that 50 per cent colleges are below these means. These colleges should make some efforts to raise up themseves on these scales. This is possible when the innovative proneness of the staff members themselves should be raised up. From the findings of this study, it can be suggested that the teacher-educators should be made mobile so that they can see their professional world outside their institutions. They should be made continuously in touch with the recent trends, their professional world and the world outside through organization of inservice education programmes for them.

Many times, it happens that the teacher or teacer-educators show favourable attitude towards innovation, but at the time of the implementation of innovation they manifest behaviour which shows that they move away from innovations. This type of attitude behaviour discrepancy should be done away with. Here the health of organization should be maintained by the management and the administrators and also by the teachers. In a healthy organization, members are reasonably clear about goals and their acceptability. The members of the school should have the information they need and they should have got it without exerting undue efforts. The communication between the teachers and administrators and between the teachers and children should be distortion-free. In the school there should be optimum power utilization. Every part of the school should work up to its optimum. The teachers—the members of the organization—feel attracted to membership. They take pride in being the members of their organization. Prevalence of cohesiveness among the members leads the organization on the path of progress. Schools with qualities of trust and openness, as measured by interpersonal relations and norms perceived to exist in the system by the school personnel tend to create a psychological climate favouring change and innovation. A healthy system would tend to invent new procedures, move towards new goals, produce new kinds of products. Such system could be said to grow, develop and change, rather than remain routinized, traditional and stagnant. The school is also an organization, it is true in the case of schools also. School system with three properties could be expected to institutionalize innovation. These properties could be expected to institutionalize innovation. The school as a healthy organization is independent from the environment in the sense that it does not respond positively to demand from without nor destructively or rebelliously to perceived demands. A healthy school system is autonomous. The ability of the healthy school to bring about corrective change soould be faster than the change cycle in the community. In healthy organizations the problems stay solved. In a healthy school system problem-solving mechanisms is not simply maintained only, but it is also strengthened.

The things treated in the above paragraphs will make the educational organizations more and more innovative which, in turn, will increase the innovativeness of the personnel working in them. The management and the administrator should be watchful in maintaining the health of the school to make it innovative and progressive.

Professional training helps much in making the teacher or teacher-educators change prone. In consonance with this finding, it is desirable that every staff member is professionally trained which includes preservice education and inservice education.

References

Barnett, H.G. *Innovation: The basis of cultural change.* New York: McGraw-Hill Book, 462, 1962

Bhola, H.S. *Innovation, research and theory.* Columbus, Ohio: School of Education, Ohio State University, 1965 (mimeo.)

Buch, M.B. (Ed.) *A survey of research in education.* Baroda : Centre of Advanced Study in Education, Faculty of Education and Psychology, M.S. University of Baroda, 1974

Havelock, H.G. and Gushin, A.. *et al. Planning for innovation.* Washington D.C.: U.S. Department of Health, Education and Welfare, 1969 (Ref. from Glacquints, 1973)

Havelock, R.G. and Huberman, A.M. *Solving educational problems: Theory and research in developing countries.* Place de Fontenoy 75700 Paris: Unesco, 7, 1977

Hodgkin, H.N. *Education and change.* London: Oxford University Press, 150, 1957

Huberman, A.M. *Experiments and innovation in education: No. 4: Understanding change in education : An introduction.* Paris: Unesco, IBE, 1973

Miles, M.B. (Ed.) *Innovation in education.* New York: Bureau of Publications, Teachers' College, Columbia University, 689, 1964

Miller, R.I. (Ed.) *Perspective on educational change.* New York: Appleton-Century-Crofts, 392, 1967

Naik, Chitra. *Educational innovation in India.* Paris: The Unesco Press, 1974

Report of the Education Commission (1964-65). Ministry of Education, Government of India

Rogers, E.M. *Diffusion of innovations.* New York: Free Press, 1962

□

Development of an Environmental Awareness Test

A.B. SAXENA, V.G. JADHAO, J.S. RAJPUT
Regional College of Education, Bhopal

Keeping in view the importance of environmental approach at the primary level, it is necessary to develop tools for its successful implementation. An environmental awareness test is one such tool which can be of immense use to elementary teachers and teacher-educators. As such, a test consisting of 57 items has been developed and standardized. The reliability of the test is 0.8. The scope and utility of such tests have been also discussed.

AN AWARENESS of one's own environment is the primary step towards understanding (Haque 19 8) the ensuing ecological and environmental crisis and also towards its successful solution. Consequently, several programmes have been undertaken by educational as well as other agencies for generating the environmental awareness. It implicitly becomes important that tools are constructed to assess the environmental awareness and thereby find out the effectiveness of any programme to educate the people about the environment. These can be used to identify all the areas of environmental knowledge and also specific areas in which a particular population may be lacking. Such information can be used for curriculum development, its renewal and for planning other programmes.

---

* The authors are thankful to Km. Renuka Awasthi, Junior Research Assistant, for her painstaking help in the administration and evaluation of the test. They are also thankful to the District Education Officer, Bhopal, and the authorities of the concerned schools of Bhopal city for their cooperation.

Obviously there cannot be any unique environmental awareness test suitable for all populations. These are expected to vary according to the several factors which include age, physical environment, schooling and socio-economic conditions. In view of the recent changes (GOI 1977) in the curriculum at the primary level which give an added emphasis on environmental approach (Saxena 1979, Saxena *et al.* 1979) both in its content and teaching method, the development of an environmental awareness test for a population of primary students acquires added relevance.

The usefulness of such a test is for teachers and teacher-educators who may like to see the effect of a particular programme. Here we present such a test developed by us. This test was used (Jadhao *et al.* 1981) to find out the efficacy of the environmental approach with regard to environmental awareness.

Objective and Scope of the Test

The present test was prepared to measure the environmental awareness of the children. The term environment was limited to physical environment and concepts related to it only. It does not include social environment. This test was developed for the students of Classes III and IV of Hindi medium schools of Bhopal city. However, it is felt that with some minor modifications it can be used for similar population elsewhere.

Preparation of the Test Items

Considering the obvious advantages of objective-type questions in a test with regard to its administration and evaluation, we decided to incorporate objective type questions as far as possible. However, keeping in view the potential of the children for imagination and creativity some short-answer type items were also included. No item having long answer was thought to be suitable because it was realized that only a few children of Class III and IV really develop necessary skill of writing long sentences. This finds further justification as the ability of child to use the language should not affect his environmental awareness score. Thus to make the assessment more thorough three types of items—multiple choice, true-false and short-answer—have been included. Table 1 gives the number of items of each type finally selected.

TABLE 1

Sl. No.	*Type of Test Items*	*Number*
1.	Multiple choice	31
2..	True-false	11
3.	Short answer	51
		Total : 57

It has been mentioned earlier that the test was developed for the population of Class III and IV. The age of the children was found to be 8+ to 10+ mostly. This is the age which falls in concrete operational stage, and formal thinking is yet to emerge. In the concrete operational stage, the child can think in terms of concrete objects and the operations he can do on them. Therefore, while preparing the test items one has to take care of this that no questions which require formal thinking or related to abstract concepts are included. In addition to this, other factors such as language, interdependence of items, type of distractors were also taken into account while constructing the test items.

It was found convenient to categorize all the aspects of the physical environment under the following six heads :

1. Universe : Knowledge about earth, stars, sun and moon.
2. Air, Water and Weather : Common characteristics of air, water and weather; and pollution of air and water.
3. Rock, Soil, Housing and Clothing : Basic concepts of rocks, stones, properties of rocks and soil; properties of houses and clothes.
4. Plants : Importance of factors to be taken care of for their survival and growth.
5. Animals : Common animals, their characteristics, uses, human body and its characteristics.
6. Abstract concepts : Pertaining to dynamic nature of the environment such as force, energy, electricity, etc.

Table 2 shows number of items constructed under each category. This categorization is purely arbitrary and was primarily designed to test the validity of the curriculum developed by us.

TABLE 2

	No. of Test Items Initially Prepared	*No. of Test Items Finally Selected*
Our Universe	26	10
Air, Water and Weather	33	10
Rock, Soil and Minerals	17	8
Plants	21	7
Animals	23	11
Abstract concepts	20	11
Total :	140	57

Item Analysis and Item Selection

Tryouts were carried on in different schools of Bhopal city. The main objectives of these tryouts were the following:

1. To determine the difficulty index and discrimination index of each item.
2. To select the good test items and modify or reject the poor ones on the basis of difficulty and discrimination indices of each item.
3. To find out the weak points in the procedure of administration and instructions.
4. To decide on approximate time limit for the test.

The difficulty and discrimination indices were calculated using standard formulae (Dececco and Crawford 1968).

Standardization and Reliability of the Test

The environmental awareness test consisted of 140 items at the initial stage. This was tried out, modified according to the feedback and tried out again on a population of 140 and 200 children. The test thus developed was again administered on a population of 275 children to see the efficacy and the reliability of the test. The final cut-off values used for selecting the items were :

Difficulty index—between 25 to 70

Discrimination index—more than 0.40.

It may be pointed out that wide range of difficulty index was deliberately chosen, at all the stages of tryouts, in order to increase the universality of the test. This was found to be necessary because our target population consists of children from Classes III and IV. The expression and skill of answering test items change significantly during this period. On the bass of the criterion mentioned earlier finally 57 items were selected. It was found by experience that the necessary time required for administering the test is 75 minutes.

Split-half method (Garret 1973) was used to determine the reliability of the test. A random selection of 100 answer-sheets was made and these were used to determine the reliability of the test, which was found to be 0.8.

Discussion

It may be useful to discuss some interesting questions which could not qualify for the prescribed values of difficulty and discrimination indices. Such questions whose discrimination indices are less than 0.20 fall broadly in two distinct groups. First, those which are so easy that their difficulty index is very high and hence they fail to discriminate. We give here certain true-false items translated in English which fall in this group. Their difficulty index ranges between 80 to 100 per cent: (*i*) iron is lighter than wood, (*ii*) air is needed for living, (*iii*) air is needed for kite-flying, (*iv*) we can see air.

Next are those which are very difficult (difficulty index ranging from 0 to 20 per cent), and hence fail to discriminate. They can be further classified into three classes: (*i*) contrary to or remote from their common experience, abbreviated as REMOTE; (*ii*) not suitable for urban population but may be more suitable for rural population, abbreviated as RURAL and (*iii*) related to higher concepts which may not be developed in the children in the present stage, abbreviated as HIGHER CONCEPT. To illustrate, we give a few typical examples (translated into English) of each category:

(*i*) *Remote*

(*a*) Which of the following doesn't flow: 1. Oil, 2. Ice, 3.Air?
(*b*) Which is the easiest to compress: 1. Air-filled balloon, 2. Wood-piece, 3. Sponge?

(*ii*) *Rural*

(*a*) Where does sparrow build its nest: 1. In houses, 2. On trees, 3. On trees and in houses?
(*b*) Which is the biggest tree: 1. Neem, 2. Mango, 3. Ficus?

(*iii*) *Higher Concept*

(*a*) You are heavier than which of the following : 1. Elephant, 2. Calf, 3. Cat?
(*b*) Where from clouds get water: 1. Sky, 2. Moon, 3. Earth?
(*c*) Why moon, sun and stars appear to move from east to west?

The list of the illustrations is not exhaustive and the categorization mentioned is tentative. It is felt that this test, with suitable variation, can be of much help to teachers in designing and developing activities while adopting and/or evaluating environmental approach. Also this test is not limited in its scope for formal stream of education only but with marginal modifications it can be used in a non-formal system for promoting functional literacy in an adult education programme or non-formal education programme at primary level.

References

De Cecco, J.P. and Crafford, W.R. The psychology of learning and instruction, 444 1968
Garret, H.E. *Statistics in psychology and education*, 339, 1973
G.O.I. *Report of the review committee on the curriculum for the ten-year school.* Ministry of Education and Social Welfare, 1977
Haque, M.A. *Journal of Indian Education*, IV, 33, 1978
Jadhao, V.G., Saxena, A.B. and Rajput, J.S. *Journal of Indian Education*, 6 (4), 34, 1981
Saxena, A.B. Environmental studies—Its place in primary school curriculum. *Education Quarterly*, 30, 21, 1979
Saxena, A.B., Gupta, B.S. and Rajput, J.S. *Teaching through environment*, 7, 1979

□

Research on Classroom Climate

L.P. SINGH
Department of Education, Allahabad University

RESEARCH efforts in education have attempted to touch every aspect of the education process like curriculum, methods and media, evaluation, management and organization of formal instruction, impact of instruction on pupils, social role of education, teacher behaviour, etc. In recent years the importance of psychological atmosphere or 'climate' in which a group works has been strongly emphasized in educational literature, although experimental evidence that group climate affects productivity came first from industrial studies. One of the most careful and systematic studies showing that group atmosphere was one of the most important single factor in increasing industrial production was conducted at the Hawthorne Plant of the Western Electric Company. It was an experimental study. The research workers, in an attempt to secure the cooperation of the workers in both the control and experimental groups, sought opinions and suggestions from members of both groups. This actually made radical changes in the psychological climate. The workers in both groups came to feel that they were important because of the interest shown in them by the research and administrative staff, and groups increased production even when very distasteful changes were made in their physical environments. Later on other studies in industrial plants considered the importance of the working climate of the groups and attempted to determine the important factors involved in climate. On research evidences it was felt that the atmosphere was created not by what the leader did but by the manner in which it was done, and by the leader's underlying attitude towards the individuals. The study of Lewin and co-workers (1939) found that the ideology of the group determined to a high degree the goals, values, and styles of living of individuals, and the groups atmosphere was determined by leadership style or behaviour of the leader. Flanders (1951) investigated the pupils' responses elicited by kinds of teacher behaviour. It was concluded that the group-centred pattern of leadership created an atmosphere or climate most conducive to learning because there was a greater degree of group interaction. Where there was little interaction, the group climate might seem outwardly serene. Similarly, Perkins (1951) concluded that the quality of teacher-pupil interactions was a major determiner of group climate. The group climate appeared to determine the amount of learning that took place. Connor (1960) examined the influence of the school and the interaction of the class group to determine the effects of each on climate. It was concluded that more desirable behaviour is shown in the classes where the climate is good. Where the climate is poor, pupils were more distant from the teacher, more disconnected as a social group, and they had a poor attitude towards school as a whole.

An examination of the above-quoted studies and further researches into the effects of climate on group behaviour indicated that group members behave differently in different kind of social and emotional climates and that leader behaviour can alter the climate. In classroom situations where conditions of good climate exist, there is opportunity for pupils to express themselves freely. In a good climate, the teacher has skill in helping pupils to become independent rather than dependent entirely upon the teacher. On the other hand, the studies on teacher behaviour, pupil motivation, teaching methods and media focussed mainly on the cognitive growth of the pupils. The available empirical evidence found in the studies (Raijiwala 1976, Choksi 1977, Desai 1979, De Sales 1979) revealed the relative effectiveness of the various inputs with regard to pupil performance and other attributes. But the variety and complexity of the classroom processes draw the attention of anyone concerned with the realization of instructional goals in classrooms.

The Concept

Before the research on classroom climate and the implications of researches are discussed some thought needs to be directed towards developing a framework of the relevant, but complex concept of classroom climate. This brings to consideration of a few conceptualization of classroom climate from abroad as well as from our country.

In the *Dictionary of Education* Good refers to all environmental conditions or qualities that tend to produce a given type of feeling or emotional response, especially the teacher-pupil and pupil-pupil relationships as environmental influences during the teaching-learning process. Thus the emphasis seems to be on the emotional aspect of the interactions in the classroom.

Flanders (1964) viewed the climate of the class as the generalized attitude towards teacher and the class. He considered the inter-relations among pupils and teacher as the main factors of climate. This climate referred to the qualities which consistently predominated in most teacher-pupil contacts in the presence or absence of the teacher. These contacts through curricula or otherwise may create a particular climate in the class in which pupils share despite individual differences.

Thelen (1960) viewed that the climate of a class is usually reflected through the activities performed in the classrooms. He studied classroom climate in terms of three component factors traceable in any classroom activity. These factors were : (*i*) Authenticity or pupil involvement ; (*ii*) legitimacy or pupil satisfaction ; (*iii*) productivity or pupil goal achievement. What climate is generated in the classrooms or in what combinations do the above components work in the class, depended on the leader, i.e. the teacher. This suggested that any change in the classroom climate is motivated by the behaviour of the teacher who initiates the teaching-learning situation and the pupils who respond to the teachers' stimulation. Therefore, in this context classroom climate may be said to be the general characteristics of a class which is the outcome of various interactions among the teacher and pupils in teaching-learning situations. Every class may exhibit the three components, viz. authenticity, legitimacy and productivity in varying proportions. That is, one classroom may exhibit more of authenticity than the other two components. Another classroom may exhibit more of productivity than either authenticity or legitimacy. And yet another class may show indications of more satisfaction to pupils and so have mere legitimacy than the other two components. This indicated that the climate in any classroom is the result of the behaviours of the teacher and pupils when they deal with some content to be learnt.

Based on the previous experiences, the definition that classroom should be taken to mean the general academic and psychological atmosphere that prevailed in the classroom as an outcome of the behaviours of the teachers and the pupils and their interactions (Sharma 1974). This definition suggests to describe classroom climate in terms of the interactive processes that occur in a classroom between the teacher and pupils on the one hand and among pupils on the other. All interactions seem to be influenced by the mutual perceptions of teacher and pupils in spite of the fact that a number of individual and group factors may be operating simultaneously in the classroom. Teacher's perception of the pupils may have the dimensions of pupil as an individual having his needs, goals, interests, motivation, initiative and expectations, etc. and as a group of pupils he has the group structure, norms, cohesiveness, acceptance, adjustment, trust and involvement, etc. Pupil's perception of the teacher may have the reference to his subject, activities he sets, methods and media, his expression and other competencies. It is through the understanding of these characteristics the nature of the classroom climate may be analysed in terms of whether it is good or bad ; congenial or non-congenial on the criterion of pupil growth in the desired direction. On this continuum of cogenial to non-congenial a variety of climate as supportive-defensive ; integrativa-dominative ; democratic-authoritarian ; open-closed, conducive-restrictive, etc. have been indentified by researches. Still the research in the area of classroom climate faces with a number of challenges and problems which require careful thinking and analysis.

Research

Most of the problems arise mainly because of the complex nature of classroom processes. In spite of a number of studies done in the foreign countries as well as in India, several questions about classroom processes remained unanswered uptil now, e.g:

1. What factors lead to varied pupil growth despite similar capacities and experiences ?
2. Which factors in the classroom cause distinct observed differences in pupils' development in spite of certain common components of the prescribed curriculum, time-table and teaching activities, etc ?
3. What are the patterns which may be evolved in different classrooms as a result of the inter-play of the several factors present in classroom situation ?
4. Which impact influences which behaviour attribute and in what way ?
5. Which of the classroom processes directly influence pupil growth ?
6. Which classroom climate is most valuable to teacher and administrators for improving teaching and learning?, etc.

This is a fact that the various factors operating in classroom are over-lapping and they are also simultaneous and fluctuating frequently. This presented difficulty in collection of data. This can only be understood to certain extent through observation of the behaviour in the classroom. Another possibility may be to collecting the perceptions of teachers and pupils regarding the classroom happenings, which again may have an element of subjectivity. Therefore, valid and reliable conclusions are not possible unless the repeated measures of most stable factors are taken. This poses a challenge to researchers. Again, too many interrelated factors make it difficult to exercise control, necessary for systematic study of the various classroom phenomenon. This aspect reduced the generalizability of the findings.

At present there is also a lack of comprehensive tool that can measure all these factors. Attempt at tool construction seems to provide a fertile research resort especially for Indian conditions. Controlled experiments may provide enough systematic effort to make studies reliable and valid. They have the possibility to be tried out again and again. Attempts have been now in the direction of studying different classes over a long period of time to find out the most common patterns that may occur in different classes. The assumption behind this is that some factors operate more consistently with a teacher having particular characteristics, a subject, similar activities, and time-table, etc. Some probable patterns based on more stable factors may be identified which may also help in constructing tools for measurement of the different components of classroom climate and their manipulation.

Only when such studies as discussed above are made, it would be possible to offer explanation with some confidence regarding classroom processes systematically and the role of generated climate in teaching-learning process. While studying the problems of the classroom, education right from the primary stage has to be divided into rural-urban and semi-urban.

Tentative hypotheses consistent with generalization about classroom climate concerning direct/indirect influence, independent/dependent behaviour, and positive/negative valence, etc. should be tested to enrich the learning processes. There are also certain relationships between teacher influence, his role in group therapy and counselling which should be peeped into and unfolded.

Implications

Research on classroom climate specifying the effects on different types of situations occurring frequently in the classroom may contribute to developing a theory of instruction. But the research results should be interpreted with caution. The results so far do not suggest that there is a single pattern of teacher-pupil interaction and relationship that should be continually maintained in the classroom. It is possible that the identical acts by the teacher may in one situation be perceived by pupils differently than the other. Results do show that over a period of time teacher-pupil contacts may establish desirable pupil attitudes and better patterns of work. There are research evidences which suggest that desirable classroom climate results in more learning, although additional evidence is needed to confirm the conclusion, especially in Indian conditions. The research on classroom climate even though ignoring the flexibility of teacher-pupil relationship and interaction and limiting to generalized, broad patterns of teacher behaviour does make a fundamental contribution in identifying general patterns of the teacher influence which may produce predictable responses of pupils establishing cause-and-effect relationships which may prove true in the long run. The task of investigating flexibility of influence which is still in the process may throw further light on classroom processes in teaching-learning situations.

Again, in the classroom teacher-pupil relationships are essentially superior-subordinate in quality. The responsibility for classroom activities is the teacher's and both the teacher and the pupils expect the teacher to initiate and to control the learning activities. The freedom to direct or not to direct the activities rests with the teacher. Whatever freedom pupils have in this respect results from the actions of the teacher. No pupil can consistently ignore the authority of the teacher and it is most difficult and sometimes impossible for a pupil to escape from teacher's control. No pupil is ever completely independent of the teacher's authority, but there are certain types of desirable educational objectives that can be achieved only in a climate involving a certain degree of independence/dependence in the teaching-learning situation. In this context a theory of teacher influence should explain why direct influence may, in one situation, increase or maintain dependence, and in another situation, may increase or maintain dependence, and in another situation, may increase or maintain independence. The theory may employ the fewest number of variables that may seem necessary to predict and understand the teacher's role.

Further, another aspect of the classroom climate, that should make a difference in the pupil's reaction to teacher influence is his perception of the learning goal and the methods of reaching that goal. Two situations may be conceived : One in which the goal and the methods of reaching the goal are clear. And the other in which the goal and the methods of reaching the goal are unclear. Certainly the reactions of a pupil to teacher influence when he knows what he is doing and when he is not sure of what he is doing will be made to clear and unclear goals in order to distinguish between the above two situations affecting the classroom climate.

Conclusion

The major purpose in presenting the background, the concept, the research and the implications of research of classroom climate was to familiarizing and highlighting the concept with a view to focussing on some critical points in classroom processes resulting into a type of climate. The situational factors, personality factors and behaviour patterns generate stimulating or inhibiting influences. These influences help in building up the mental frame, attitudes, values. teacher-pupil adjustment, cohesion or conflict, etc. The cumulative effect of all these complexes and interlocking patterns in sociological and psychological framework of a class creates classroom climate. A study of the correlates of classroom climate in relation to other variables may unfold the classroom complexities further. A time has come when institutional and experimental studies should be taken on the various dimensions of classroom climate explaining the various phenomenon taking place in teaching-learning process and manipulating the variables to produce a congenial climate of learning in the classrooms.

References

Chokshi, Amita J. Effects of psychological education inputs on the academic performance of primary school children. Unpublished Ph.D. thesis, M.S.U., Baroda, 1977

Connor, D.V. Behaviour in class groups of contrasting climate. *The British Journal of Educational Psychology*, 30, Nov. 1960

Desai, S.D. A study of classroom ethos, pupil's motivation and academic achievement. Unpublished Ph. D. thesis, M.S.U., Baroda 1979

Flanders, Ned A. Personal-social anxiety as a factor in experimental learning situations. *Journal of Educational Research*, 45

Flanders, Ned A. Some relationships among teacher influence, pupil attitudes and achievement. In Biddle and Ellena (Eds.) *Contemporary research on teacher effectiveness*. New York: Holt, Rinehart and Wintson, 1964

Lewin, Kurt, Lippitt and White. Patterns of aggressive behaviour in experimentally created social climate. *Journal of Social Psychology*, 10, May 1939

Marie, D. Sales. An investigation into the factors affecting classroom climates in relation to pupils' development. Unpublished Ph.D thesis, M.S.U. Baroda, 1979

Perkins, H.V. Climate influences group learning. *Journal of Educational Research*, 45, Oct. 1951

Raijiwala, B.C. Changing teacher behaviour in the teaching of science and studying: Its effects on pupils. Unpublished Ph.D. thesis, M.S.U., Baroda, 1976

Sharma, M.L. An investigation into organizational climate of secondary schools of Rajasthan. Unpublished Ph. D. thesis, M.S.U., Baroda, 1974

Thelen, H.A. *Education and the human quest*. New York: Harper Brothers, 1960 □

Affective Tone in the Primary Classroom

(Smt.) J.K. PILLAI

Professor of Education, Department of Education
Madurai Kamaraj University, Madurai

THERE HAS developed, in the past few years, a whole lot of testimony from educators and psychologists, suggesting that much potential creativity is made to wither by an unfortunate climate in the classroom. Schools are viewed as dehumanizing to students and as a powerful force which fosters conformity, competition and negative attitudes. Beech (1971) describes a primary classroom thus : "so here are the students arranged in their cells awaiting frequently with genuine dread, their daily six-hour hastle with authority". James (1969) deplores all that happens in the schools as a mere 'taming process.' To quote her, "confined to the classroom, the students crouch, victims of the circumstances that find them there. In those cages within the large cage, the major part of the taming process occurs". Goodman (1964) condemns what happens in the schools as 'miseducation', where the children are "depersonalized, venally graded", and "there is no place for spontaneity or free spirit". Holt (1964) discussing how children fail concludes : "we kill not only their curiosity but their feeling that it is a good and admirable thing to be curious, so that by the age of ten, most of them will not ask questions and will show a good deal of scorn for the few who do". Torrance (1960) doing explorations in creative thinking, warns us that "if the classroom is to play a positive, productive, creative or whatever as opposed to a positively destructive role in the life of our children, it must generate an atmosphere which makes this possible." Toynbee (1964), the historian, stresses the importance of providing chances for potential creativity as a matter of life and death. He says : "the outstanding creative ability of a fairly small percentage of the population is mankind's ultimate capital asset".

'Eupsychia' in Our Schools

How to generate such an atmosphere in the schools which will foster the creative thinking of children ? Maslow (1959) in his essay 'A holistic approach to creativity' says : "The right climate, the best climate, for enhancing creativeness would be a 'utopia' or 'Eupsychia'—as I prefer to call it—a society which is specifically desperate for improving self-fulfillment and psychological health of all people". It is not possible to develop a 'eupsychia' in our schools ? Should not our schools be concerned with more than the cognitive development of the students ? Should not there be some consideration for personal welfare and mental health and happiness of the students ? Should not the schools devote more attention to the climates they provide for effective learnings of their students ? It is unfortunate that most of the emphasis in schools at all stages has been in the area of cognitive, and consequently the social, emotional aspects of learning have been ignored. Carl Rogers, a pioneer in non-directive psychotherapy laments that "educational institutions have been focussing so intently on ideas, on educational from neck up that the resulting narrowness is having serious social consequences. Knowledge without feeling has led to public irresponsibility, in difference and ruin". Theory and research presented by Anderson (1970), Flanders (1967), Khan and Weiss (1973), Withall (1949), Wright and Nuthall (1970) and replication studies in India by Buch (1975), Desai (1970), Roy (1970), Jangira (1973), Patel (1973), Pavanasam (1973) and Mehta (1967) support the notion that the teachers' style and pattern of behaviour create a socio-emotional climate in the classroom, which directly affects the attitudes and behaviour of students. There is increasing recognition today for the role the teachers' interactions with students play in influencing attitudes, feelings and academic achievement of pupils. Students respond to everything the teacher communicates, both verbally and non-verbally, not just the content of the lessons. Hence the way in which the teacher interacts with students in the process of instruction determines students' feelings in the classroom. The teachers' awareness of the socio-emotional climate in the classroom and her attitudinal interaction with students is extremely important, for the classroom *affective tone* can facilitate or interfere with the goals of instruction (Ripple 1965). Just as the teacher sets the 'stage' of her classroom through her selection of resource materials, and arranging them, she sets the 'tone', the flavour and quality of learning in her classroom. What sort of 'tone', also labelled as 'climate' or 'atmosphere' by various observers, do our teachers set in our primary schools ? What are the affective qualities an effective teacher exhibits ? What type of interactions take place in our primary classroom ?

Affective Tone in the Primary Classroom

The tone of the class reflects the kind of behaviour teacher exhibits in the classroom. Some teachers dominate the classroom, with a strong emphasis on correct procedures, conformity, close supervision and this rigid tone of a teacher-directed classroom is a stultifying atmosphere for learning. In contrast to this is the extreme *laissez fair* tone which is often child-dominated and the teacher is too permissive, and the result is a kind of atmosphere which promotes confusion and chaos. A healthy atmosphere is one which contributes towards the acquisition of positive feelings. Here the teacher encourages children to be engaged in activities leading to learning of skills and concepts, praises them for good work, ideas and desirable behaviour. She also teaches control of primitive impulses by clearly discouraging destructive behaviour, by giving opportunities for discussion and offering other alternatives. The tone of this classroom is neither too rigid nor too permissive but human and caring.

A small study to observe the affective interactions of teachers with students in primary schools was taken up by the Education Department of Madurai Kamaraj University.

Affective Tone Analysis System

A system to analyse the verbal and some non-verbal behaviours of the teachers was developed based on Flanders' interaction analysis categories system but with modified categories. This structured observation instrument was developed after going through a number of previously developed instruments of Pack and Tucker (1973), Bruininks (1975), Bills (1975), Hunter (1975)—all related to affective domain of schools. The instrument was validated for the affective qualities of classroom learning and was developed in such a way that it was easy and economical to administer, score and interpret. No special training is necessary for using the instrument.

Description

AFFECTIVE TONE ANALYSIS SYSTEM (ATAS) (15mts.)

Verbal Positive

1. The teacher praises the work of an individual child/group
2. The teacher praises the ideas of an individual child/group
3. The teacher praises the personal/social behaviour of an individual/group
4. The teacher uses the names of children
5. The teacher personalizes remarks

Non-Verbal Positive

6. The teacher moves physically close to the students
7. The teacher maintains eye contact with the students

8. The teacher criticizes the work of an individual/group
9. The teacher rejects ideas of an individual/group
10. The teacher criticizes personal/social behaviour of students

Name and address of the school :
Name of the teacher :
Age of the teacher :
Teaching experience of the teacher :

OBSERVER'S OPINION

The Teacher Appears to be	*Yes*	*No*	*Remarks*
Calm			
Confident			
Cheerful			
Organized			
On task			

The instrument stresses observation of the teachers' positive and negative responses to students, both verbal and non-verbal.

What values and attitudes are communicated by the teacher in the classroom is indicated by the ten categories. Whether the teacher gives positive feedback only for the work of the students or whether she accepts and encourages the ideas of the students and thus fosters creativity is observed. Whether the teacher cares only for the cognitive aspect of learning or whether she is also concerned with the personal, social behaviours of her students individually or in group is also seen. Whether a teacher gives consistently negative feedback or has a judicious mix of positive and negative feedback is analysed.

What attitude of mutual respect and regard for the students the teacher has and how far she identifies herself with the children is observed by categories 4 and 5. By personalizing remarks like "I feel", "I think", etc. the teacher shares her experiences with the children and establishes rapport and warmth.

Non-verbal behaviour such as frowns, smiles, body stances, tone of voice, a friendly arm placed about the shoulder of the child, a glance of recognition, respecting the diginity of the child by looking directly at the child while talking, etc. are also important in setting the affective tone of the classroom. These are either positive builders of attitudes and learning or negative reinforcers. Categories 6 and 7 have been included to give a sample of the teacher's non-verbal behaviour. In short the ten categories of ATAS attempts to find out what kind of atmosphere prevails in the classroom with a hope to encourage the kind of behaviour that contributes towards acquisitive feelings and by limiting the kind of behaviours that results in bad feelings.

The ATAS also includes the biographic data of the teachers observed, some items identified as important to teacher effectiveness and the observer is asked to indicate whether the teacher appears calm, confident, cheerful, organized and on-task.

Use : The affective tone analysis system is quite easy to use and appropriate for assessing the affective behaviour of teachers to students in any instructional setting. The observers were given a brief orientation regarding behaviours that go to make up the observer's opinion items ; administration time was 15 minutes per class. A tally is made each time any behaviour occurs within a 30-second period. For example, if a teacher maintains eye contact with a student for 60 seconds, two tallys are recorded or if a teacher makes eye contact with two different students within one 30 seconds period, two tallys are made. The biodata and observer's remarks are filled in before the observer leaves the classroom in the next five minutes.

Validity : One source of validity is the research on effective teaching. Studies by Mehta (1969, 1970), Pareek and Rao (1961), B. Roy (1970), Mitra (1971), Jangira (1972), Pangotra (1972), Lulla (1973), Desai

(1970), Patel (1973), H. Desai (1975), and Pavanasam (1975) have established that teachers' acceptance of ideas, praise and encouragement of their work and ideas positively related to significant gains in students' higher motivation, adjustment, and achievement. The second source of establishing validity for the instrument is in the relationship of its content to established observation system such as FIACS of Flanders (1967), FIACS of Hunter (1972) and Bruininks' (1975) Affective Feedback Guide. The third source of validity is the reaction of 50 primary school teachers on whom the system was used in a pilot study. Ninety per cent of the respondents felt that the instrument assessed the most important affective responses of teachers.

Reliability : Four independent raters used the instrument without any previous training and inter-rater reliability was found to be quite high, ranging from 80 to 90 per cent. A brief orientation was necessary in the observer's opinion items to establish high inter-rater reliability.

Sample : Observations were made of 372 teachers belonging to 49 primary schools in and around Madurai. The schools drawn from urban, semi-urban and rural areas, managed by local authorities as well as private bodies. Observations were made of men as well as women teachers, teaching Classes I to V.

Analysis : Analysis of mean scores, percentage loading of each construct in each type of schools, ratio of positive to negative behaviour, ratio of verbal positive to non-verbal positive behaviour, analysis of mean and standard deviation of men and women teachers, t-values of the comparisons, management-wise analysis, medium-wise analysis and the analysis of observer's opinions and of observer's free responses were done.

Major Findings

1. In genenal, all the teachers observed in this study exhibit more positive behaviours than negative.
2. Positive non-verbal behaviours are greater than positive verbal behaviours.
3. The ratio positive verbal : negative verbal ranges between 1.64 : 1 to 3.86 : 1. Even the teachers who exhibit the most positive affective behaviour seem to use only about four times as much positive responses as compared to negative. On an average, teachers seem to be quite stingy in their positive verbal feedback, using only about two times as much positive responses to negative.

4. In general, urban teachers seem to be using more verbal feedbacks, both positive and negative, than teachers of rural and semi-urban areas.
5. The teachers of schools managed by municipalities and panchayat unions seem to be more apathetic, have least percentage loading for verbal positive behaviours. On the other hand, teachers of Kallar reclamation schools have a high ratio of positive/negative behaviour of all types of rural schools.
6. There doesn't seem to be much significant difference in the affective responses of teachers in terms of sex and years of experience.
7. There is significant difference at .01 level in the affective responses of teachers in terms of urban, rural areas and private management and local authorities management. Urban school teachers have higher affective interaction than the rural teachers and privately managed teachers exhibit more positive behaviour than those managed by local authorities.
8. In general, primary teachers are quite well organized but lack in self-confidence and become nervous when they have visitors observing them.
9. The teachers very rarely praise the children's personal-social behaviour, even when the children deserve.
10. The teachers in general lack in personal identification, and communication of personal feelings especially positive feelings.

Implications

The purpose of the study is not to evaluate teachers but only to understand what sort of affective tones the primary classroom have. Now that we have some general idea about what our teachers lack, the implications are that the following need to be done as follow-up activities :

1. It is necessary to discuss the observations of this study with the teachers.
2. Some feedback demonstrations and conferences need to be arranged.
3. Micro-training programmes need to be organized where experiential sessions in practising the skills of feedback, reinforcement, personalization of remarks, etc. have to be conducted.

4. Training in increasing positive affective interactions have to be given to teacher-educators in training institutes so that these could be included in pre-service training programmes.
5. Effective programmes to prepare trainers of teacher-educators to demonstrate appropriate affective interaction with students need to be designed.

It is hoped that such efforts to improve the affective tone of the primary classrooms will foster in students greater creativity and personal growth.

References

Anderson and Flanders. Teacher influence in the classroom. In Amidon and Haugh (Eds.) *Interaction analysis, theory, research and application.* Addison Wesley, 1967.

Beech, Hold Henry. *The creative classroom.* N.Y. : Charles Scribner and Sons, 1971

Bills, Robert. *A system for assessing affectivity.* University of Alabama, 1975

Bruininks. *Teacher affective feadback guide.* University of Minnesota, 1975

Buch, M.B. *Studies in teaching and teacher behaviour.* CASE, M.S. University of Baroda, 1975

Desai, D.B. *Studies in teaching and teacher behaviour.* CASE, M.S. University of Baroda, 1970

Desai, H. *Studies in teaching and teacher behaviour.* CASE, M.S. University of Baroda, 1975

Goodman, Paul. *Compulsory miseducation.* N.Y. : Vintage Books, 1964

Holt, John. *How children fail.* N.Y.: Dell Publishing Co., 1964

Hunter. *Encounter in the classroom.* N.Y. : Holt, Rinehart and Winston, Inc., 1972

James, Deborrah. *The taming: A teacher speaks.* N.Y. : Mcgraw-Hill, 1969

Jangira, N.K. *Studies in teaching and teacher behaviour.* CASE, M.S. University of Baroda, 1972

Maslow, Abraham. *Creativity in self-actualizing people.* In H.H. Anderson (Ed.) *Creativity and its cultivation.* N.Y.: Harper, 1959

Mehra. *Studies in teaching and teacher Behaviour.* CASE, M.S. University of Baroda, 1969

Lulla, B.P. *Studies in teaching and teacher behaviour.* CASE, M.S. University of Baroda, 1973

Pangotra. *Studies in teaching and teacher behaviour.* CASE, M.S. University of Baroda, 1972

Patel. *Studies in teaching and teacher behaviour.* CASE, M.S. University of Baroda, 1973

Pack and Tucker. Research on teacher education. In R.M.W. Travers (Ed.) *Second handbook of research on teaching*. Rand McNally, 1973

Pareek and Rao. A study of teacher behaviour and student mental health. *Report of the project of ICMR*. New Delhi, 1971

Pavanasam. *Studies in teaching and teacher behaviour*. CASE, M.S. University of Baroda, 1975

Ripple. Affective factors influence classroom learning. *Educational Leadership*, 22, 1965

Roy. *Studies in teaching and teacher behaviour*. CASE, M.S. University of Baroda, 1970

Torrance, Paul. Exploration in creative thinking. *Education*, 1960

Withall. The development of a technique for the measurement of socio-emotional climate in classroom. *Journal of Experimental Education*, 17, 347-367, 1949

Wright and Nathall. Relationaship between teacher behaviour and pupil achievements in three experimental science lessons. *American Educational Research Journal*, 7, 477-491, 1970 □

Self-Concept of Harijan Students and Attitudes of Other Students towards Them

HARIBHAI G. DESAI

Professor and Head, Department of Education
Saurashtra University, Rajkot

D.A. UCHAT

Lecturer in Education, Saurashtra University, Rajkot

IN OUR country, Harijans have been considered a backward community. They were formerly treated as untouchables. The attitudes of people towards Harijans have changed favourably through the pious teaching and sincere efforts of Gandhiji. The government has provided them with many facilities to raise their social status. Under the circumstances, it is necessary to know the attitudes of Harijan students and attitudes of other students towards them. Self-concept of Harijan students has been examined in the present study. The perception of Harijan students by various student groups has also been studied. This study covers the college students of the first-year classes of arts, science and commerce faculties affiliated to the Saurashtra University.

Definition of Self-Concept

For the present study, self-concept of Harijan students was so defined as to include perception of self, perception of college, and perception of social milieu. Operationally, self-concept consisted of the subjects' responses to three sets of elements : (*i*) *Self*— 'Me' and 'Me as a student', (*ii*) *College*—'Teachers' and 'the examination system', (*iii*) *Social milieu*— 'Opportunities for making friends', 'social activities' and 'Community acceptance of me'.

The Instrument

Projective-technique, Q-sort technique, rating methods, personality word list, questonnaire method, and the semantic differential are some of the methods for measuring self-concept. The semantic differential has been used for the present study. Here the subject had to give his feelings regarding dependent variables by putting a cross-mark. These dependent variables were : 'me', 'me as a student', 'teachers', 'the examination system', opportunities for making friends', 'social activities', 'community acceptance of me', and 'perception of Harijan students'.

Each of the above dependent variables has been presented in the characteristic form of a set of 11 bipolar adjectives. These bipolar adjectives were : good-bad, sharp-dull, ugly-beautiful, strong-weak, slow-fast, shallow-deep, effective-ineffective, valuable-worthless, unfair-fair, intelligent-stupid, and dishonest-honest. One to seven scores have been allotted to each of these pairs of bipolar adjectives. Having kept the viewpoint of polarity, five pairs out of 11 pairs are placed on the opposite side of other six pairs. The positive weight of six pairs is to the left side, while the positive weight of other five pairs is to the right side.

The test-retest reliability coefficients (N=100) of the instrument for the dependent variables ranged from 0.52 to 0.75. The retesting took place after one month's duration. The validity of the instrument was checked by correlating the scores on this instrument with the scores on a personality word list, in which 80 personality traits are rated on a five-point scale. The validity coefficients (N=115) for the variables ranged from 0.36 to 0.51.

Purpose of the Study

There were two objectives of the present study : (*i*) to study the self-concept of Harijan students, and (*ii*) to study the perception of Harijan students by various college-student groups. Considering these purposes, certain null-hypotheses, as given on the next page, were framed.

1. Harijan students do not differ in their perceptions of the concepts 'me' and 'me as a student'.
2. Harijan students do not differ in their perceptions of the concept 'teachers' and 'the examination system'.
3. Harijan students do not differ in their perceptions of the concepts 'opportunities for making friends', 'social activities', and 'community acceptance of me'.
4. There will be no significant difference among various college-student groups in their perceptions of 'Harijan students'.

For testing the fourth null-hypothesis, five independent variables were considered: (*i*) social group, (*ii*) religion, (*iii*) social class, (*iv*) sex and (*v*) faculty.

Sample

At the time of the investigation, 47 colleges of arts, science and commerce faculties were affiliated to the Saurashtra University. The colleges were spread over six geographical districts of Saurashtra area : Amreli, Bhavnagar, Jamnagar, Junagadh, Rajkot and Surendranagar. Of the 47 colleges, 27 colleges were selected at random. One division each of the selected colleges was included in the sample.

The sample consisted of 3,310 students of the first-year classes of arts, science and commerce colleges. The sample included 824 Patels, 194 Rajputs, 614 Brahmins, and 100 Harijans. The religion-wise break-up was : 2,820 Hindus, 127 Muslims, and 363 Jains. The sample included 3,086 students from advanced class and 224 students from backward class (including 100 Harijans). Of the 3,310 subjects, 1,109 were female students and 2,201 were male students. Faculty-wise break-up was : arts 1,279, science 810, and commerce 1,221.

Analysis and Interpretation of Data

As per the objectives laid down, two analyses were included in the present study. The first was related to the self-concept of Harijan students. Perception of the Harijan students by various college-student group is reported in the second analysis.

It will be pertinent to clarify here the specific nature of analysis. Only four social groups are included in the analysis on several counts :

(*i*) Saurashtra is a region where 202 princely states existed prior to independence. The Rajputs who belonged to the ruling class lost their power after independence, but they continue to possess the same temperaments. As against that, their economic status has substantially dwindled. The Patels (farmers by occupation), who were one of the groups being ruled prior to independence, have improved their economic status (through cash crops like groundnuts) substantially after independence. Thus Rajputs have gone down and Patels have come up in social hierarchy. (*ii*) Traditionally, Rajputs and Patels have been mutually rivalous groups and clashes between the two social groups are common even today. (*iii*) In Saurashtra, Brahmins have remained a non-controversial social group, but at the same time have remained a highly educated group. (*iv*) Harijans have always remained a neglected, underprivileged, and economically poor group. (*v*) Due to typical sociological situation prevailing in Saurashtra, as mentioned above, the researchers have concentrated on four social groups only : Patels, Rajputs, Brahmins, Harijans. These four groups taken together covered 1,732 subjects out of the total sample of 3,310 students. The remaining 1,578 subjects belonged to about twenty small social groups, thus rendering further analysis insignificant.

1. Self-concept of Harijan Students

After having received all the booklets, the investigators first scored them. The scores were recorded for each dependent variable. For each dependent variable, the maximum score obtainable was 77 and minimum score possible was 11.

The major findings are reported for each of the sub-sets of self-concepts as defined for the present study. That is, the data are examined as they pertain to perception of self, perception of college, and perception of social milieu.

Perception of self was measured by two dependent variables : 'Me' and 'Me as student'. Perception of college had been examlned by two variables :'Teachers' and 'The examination system'. 'Opportunities for making friends', 'Social activities', and 'Community acceptance of time' were the three variables that evaluated perception of social milieu. Data are presented in Table 1.

TABLE 1

SELF-CONCEPT OF HARIJAN STUDENTS

Perception of Self: *Dependent variables*	N	M*	SD
1. Me	100	63.44	10.42
2. Me as a student	100	61.62	9.34
Perception of college:			
Dependent variables	*N*	*M**	*SD*
3. Teachers	100	62.02	10.54
4. The Examination system	100	51.61	16.61
Perception of social milieu :			
Dependent variables	*N*	*M**	*SD*
5. Opportunities for making friends	100	62.93	10.12
6. Social activities	100	60.00	13.30
7. Community acceptance of me	100	62.94	10.79

*High scores reflect favourable perceptions

Table 1 indicates that among all the seven dependent variables the students have highest perception for 'Me' concept and have lowest perception for 'Examination system'. Data regarding the perception of self seem to suggest that Harijan students have higher perception of 'Me' concept than their perception of 'Me as a student,' but the difference between means is not significant. For the perception of college, Harijan students seem to have higher perception for their teachers than for the examination system. Here also difference between means is not significant. Social activities get lowest endorsement among all the three elements of social milieu. Differences between means of all variable pairs of social milieu are not significant. Thus the first three null-hypotheses, mentioned earlier, cannot be rejected.

2. Perception of Harijan Students by Various Student Groups

In this analysis data regarding the perception of Harijan students have been presented according to various independent variables. The independent variables are as follows : (*i*) Social groups, (*ii*) Religion, (*iii*) Social class, (*iv*) Sex, and (*v*) Faculty. Data regarding the perception of Harijan students by various student groups have been reported in Table 2.

TABLE 2

PERCEPTION OF HARIJAN STUDENTS BY VARIOUS STUDENT GROUPS

Independent Variable	*Perceiving Group*	*N*	*M**	*SD*	*t-value****
Social Groups	a. Patel	824	52.70	13.21	a/d=8.440
	b. Rajput	194	53.23	13.43	b/d=6.419
	c. Brahmin	614	53.54	12.97	c/d=7.538
	d. Harijan	100	62.39	10.51	
Religion	a. Hindu**	2,720	53.18	13.08	
	b. Muslim	127	54.88	12.22	
	c. Jain	363	52.58	13.87	
Social Class	a. Advanced	3,086	53.25	13.17	a/b=2.684
	b. Backward**	124	55.80	10.25	
Sex	a. Female**	1,090	56.42	12.42	a/b=9.409
	b. Male**	2,120	51.96	13.27	
Faculty	a. Arts**	1,243	55.72	13.43	a/b=10.26
	b. Science**	788	49.86	11.94	a/c=4.17
	c. Commerce**	1,179	53.47	13.13	b/c=6.311

**High scores reflect favourable perceptions

**Excluding Harijan students

***Significant at 0.01 level

Only significant t-values are reported.

Table 2 indicates that Harijan students perceive themselves in the most favourable light. The t-values suggest that Harijan students possess significantly higher perception of own group than perception by Patel, Rajput, and Brahmin students. The table also reveals that Harijans are perceived in the least favourable light by Patels, Rajputs, and Brahmins, with almost similar ratings.

Table 2 also shows that three religious groups (Hindu, Muslim and Jain) possess almost identical perception of Harijan students, the differences between means of any two groups not being significant. Thus these three religious groups do not differ in their perception of Harijan students. Perception of Harijan students by advanced class students is lower than the perception of Harijan students by backward class students. The difference is significant at 0.01 level. Thus Harijan students were perceived less favourably by advanced class as compared to perception by backward class.

The perception score of female students is higher than the perception score of male students. The difference between means of these two groups is significant at 0.01 level. Thus female students perceive Harijans more favourably than male students. Arts students possess significantly higher perception of Harijan students than the science and commerce students. The differences between means of the groups are significant at 0.01 level. Difference between means of commerce students and science students is also significant at 0.01 level. Thus these three groups differ in their perception of Harijan students. Arts faculty students perceive Harijan students most favourably and commerce faculty students perceive them more favourably than science faculty students.

□

Effect of Varying Sources of Feedback upon the General Teaching Competence of Student-Teachers under Microteaching Situation

VIMLA MAHESH
Lecturer, Department of Education
Lucknow University

J.P. SRIVASTAVA
Lecturer, Department of Education
Meerut University

SHEELA SINGH

TEACHER EDUCATION programme in India has been criticized not only by the educationists and thinkers but by laymen also. It is said that the teacher-educators and teacher-training institutions are not producing and preparing effective teachers. In most of the teacher-training institutions more emphasis and importance is given to theory than to practice. Forty to 60 lessons are prescribed in the syllabus and these lessons are somehow completed within a month or two. Method masters give five or six lectures on the teaching methods and demonstrate a few lessons and ask the students to go for teaching practice. Student-teachers are not fully prepared to face the class they teach. Not only this, the supervisors observe only a small bit of the lesson in the class and give vague and general remarks about the teaching. The criticism is not pointedly specific. Therefore, the feedback fails to give the desired results. Most of the teacher-educators still follow the old and traditional methods of teaching and do not bother to pick up the recent new techniques in education. No wonder if they do not know the effective modes of feedback.

Now there is a need for typing out new ideas in teacher training programme. Allen and his associates (1962, 1967, 1969) at the University of Stanford proposed a new technique 'microteaching' for improving the teaching skills of student-teachers. In the relatively very short period of less than 14 or 15 years microteaching has come up as a very useful device of training prospective teachers. In India some very important and good work has been done at the CASE, Baroda (Chudasma 1971, Maker 1972, Singh 1972, Passi 1975). The studies in microteaching have shown that the groups taught by standard microteaching technique had higher mean scores as compared to a group under traditional techniques.

Microteaching is a scale-down process in terms of class size, length of the lesson, teaching time and teaching complexity. Analysis of various teaching skills into components and training of student-teacher in each component is the first essential aspect of microteaching. The feedback programme is equally important where a diagnostic treatment is given in a particular defective area. The feedback can be varied from self-criticism to supervisor or peer-group criticism (Allen and Ryan 1969). Effective feedback is possible through various means like VTR, tape-recorders and supervisors. In Indian conditions VTR and tape-recorders are very expensive and college supervisors are also in the sense that they are in shortage of time. Steinen (1967) found that feedback from fellow student-teachers and feedback from pupils were both found to be more effective than self-appraisal feedback by the student-teachers themselves.

Objectives

The objectives of the study were as follows :

1. To study and compare the effectiveness of feedback given by peers and that given by college supervisor upon the general teaching competence of student-teachers.
2. To study the effectiveness of fedback given by the peers upon the general teaching competence.
3. To study the effectiveness of feedback given by the college supervisors upon the general teaching competence.

Hypotheses

The hypotheses tested in this study were:

1. There is no significant difference between the teaching competency scores of student-teachers when the source of feedback is varied from peers to college supervisors.
2. There is no significant difference in the gain scores of general teaching competency of student-teachers when the feedback is given by the peers.
3. There is no significant difference in the gain scores of general teaching competency of student-teachers when the feedback is given by the college supervisor.

Scope and Delimitations

The scope of the study was limited to the following:

1. The present study was conducted on female student-teachers of social science group.
2. The following five teaching skills were taken up for experiment: (*i*) Probing questions, (*ii*) Stimulus variation, (*iii*) Reinforcement, (*iv*) Explaining, and (*v*) Illustration with example.

Population and Sample

Female student-teachers of B. Ed. constitute the population for the present study. Unit of sampling was one training college (for girls only) selected out of 15 training colleges of Rajasthan. There were 94 student-teachers. Twenty student-teachers—ten for standard microteaching technique (SMT) and ten for modified microteaching technique (MMT)—were selected for the present study. These two groups were roughly equated on the basis of teaching subject, age, academic qualification and general teaching competence.

Tools Used

1. Baroda general teaching competence rating scale prepared by CASE, Baroda.

2. Observation schedules for the different five teaching skills prepared by CASE, Baroda.
3. Standard microteaching lesson plans prepared by CASE, Baroda.

Procedure

After completing first round of practice of teaching (15 lessons) Baroda general teaching competency rating scale was given to the supervisors to rate the classroom teaching performance of those student-teachers who had offered one or two subjects of social science group for their practice of teaching. These scores were recorded as pre-test scores for comparison with the post-test scores after the experiment work was over. The two groups, each consisting of 10 student-teachers, were formed and equated on the BGTC scores, age, teaching experience and academic qualification. The detail is given in Table 1.

TABLE 1

AGE, TEACHING EXPERIENCE, ACADEMIC QUALIFICATION AND BGTC SCORES OF THE TWO GROUPS

Groups	*Age Range*	*T. Exp.*	*Academic Qualifications*		*BGTC Scores*		
					Mean	*SD*	*Ratio*
			B.A.	M.A.			
Group A (SMT)	20-24 yrs	Nil	7	3	38.30	4.5	.33
Group B (MMT)	20-23 yrs	Nil	6	4	37.30	3.3	

Group A was then exposed to SMT to whom the feedback was given by the peers and Group B was exposed to MMT to whom the feedback was given by the college supervisor.

As this experiment was to be conducted under simulative condition, the student-teachers who have been selected for the study acted as microteachers and students both. The student-teachers of Group A (SMT) acted as peer supervisors also. They were oriented in theory and practice of microteaching and were made familiar with different teaching skills. They were shown the model lessons on each of the five skills selected for the present study. When the student-teachers were acquainted with microteaching procedure they were asked to prepare their microlessons for the experiments. In microteaching the following five steps were adopted for the time period given against each :

Teach		6 minutes
Feedback		6 minutes
Replan		12 minutes
Reteach		6 minutes
Refeedback		6 minutes
	Total	36 minutes

Each student-teacher gave two micro-lessons on each of the five skills. Peers and college supervisors observed each lesson of their groups with the help of observation schedules prepared by CASE, Baroda and gave feedback to the concerning student-teachers. During block practice teaching the student-teachers gave macro-lessons. They were supervised by college supervisors. After BPT college supervisor rated them. These scores were treated as post-test scores. The following design chart clearly shows the whole process adopted for the experiment.

DESIGN CHART

Procedure	*Group A* *SMT*	*Group B* *MMT*	*Time Schedule*
1. Pretest— General Teaching Competence	After first round of teaching		
2. Orientation of Microteaching	Lectures, Discussion, Demonstration, Practice, etc.		12 days
3. Microteaching	2 trails of each skill Total 10 lessons	2 trails of each skill Total 10 lessons	10 days
4. Supervision and feedback	By peer supervisors	By college supervisors	
5. Macrolesson	During Block Practice Teaching		
6. Supervision	By College Supervisors		
7. Post-test —BGTC	After Block Practice Teaching		

Analysis and Discussion

The aim of the study was to measure and compare the effectiveness of feedback given by the peers and that given by the college supervisor. At the same time it was also the aim of the study to see the gain in general teaching competence as a result of feedback. At the end of the experiment the data was tabulated and analysed to test the hypotheses and to come at conclusion. The results are presented in Tables 2 and 3.

TABLE 2

SIGNIFICANCE DIFFERENCE BETWEEN THE MEANS OF GAIN SCORES ON GENERAL TEACHING COMPETENCE OF SMT AND MMT GROUPS

Groups	*Mean*	*SD*	*SED*	*'T' ratio*	*Level of Significance*
SMT	48.30	7.7	4.05	2.34	.05
MMT	57.80	9.3			

It is evident from Table 2 that the t-ratio 2.34 is significant at .05 level. This clearly shows that there is significant difference between the general teaching competency scores of Group A (SMT) which was supervised by peers and Group B (MMT) which was supervised by the college supervisor. The effect of feedback provided by the peers significantly differs from the effect of feedback provided by the college supervisor. Mean of the gain scores on general teaching competency rating scale of (MMT) group is 57.8 which is higher than 48.30 of the (SMT) group. This clearly indicates that the student-teachers to whom the feedback was given by the college supervisor, gain more. They improve their teaching skills more in comparison to the other, Group A (SMT) to whom the feedback was given by the peers, though the intensive training in observation and feedback skill was given to them. There may be many reasons. The college supervisors are experienced teachers, they have insight and they know better techniques of giving feedback. At the same time student-teachers have more faith and confidence on their supervisors rather than on peers. The supervisor can easily convince the student-teachers about their defects while it is very difficult for the peers.

TABLE 3

SIGNIFICANCE DIFFERENCE BETWEEN THE MEANS OF PRE-TEST AND POST-TEST SCORES ON GENERAL TEACHING COMPETENCE OF SMT AND MMT GROUPS

Groups	*Means of Pre-test Scores*	*Means of Post-test Scores*	*Combined SD*	*SED*	*'t' ratio*	*Level of significance*
SMT	38.30	48.3	7.4	2.30	4.06	.01
MMT	37.70	57.05	8.7	2.75	6.90	.01

Table 3 shows that both the t-ratio of pre-test and post-test GTC scores of both the groups are significant at 0.01 level. This indicates that the effect of feedback whether it is provided by the peers or by the college supervisor has significant effect on the general teaching competence of student-teachers. The student teachers are conscious and aware of the remarks given to them and try to improve their teaching. They increase their teaching competence at significant level if the feedback is provided by the trained persons. Various studies have been done on the effect of feedback to teachers. It was found that the feedback will tend to increase the teaching skills. Steinen (1967) also concluded that the feedback given by the peers and feedback given by the pupils both were more effective than self-appraisal. Pangotra (1972) found that student-teachers who received interaction analysis feedback changed significantly their verbal behaviour in a desired direction. Thus it can be said that if feedback is given properly and sincerely, it has its significant effect on teaching. At the same time knowledge of different teaching skills and observation skills also play a significant role in improving the teaching competence. Thus both the null-hypotheses have been rejected.

Suggestions

After conducting the experiment and analysing the data it is found that microteaching is an effective device for increasing the general teaching competence of student-teachers. Microteaching under simulative condition can easily be practised in every department and college of education. With this in mind it can be recommended that teacher-educators should try to incorporate the idea of microteaching in student teaching programme. For introducing this the cooperation of supervisors and administrators is required.

The feedback—either it is given by the college supervisor or by the peers—does significant improvement in teaching skills though the feedback from the college supervisor is more effective than that given by the peers. As far as possible the lessons should be supervised by the college supervisor.

References

Allen, D.W. Microteaching : A new framework or inservice education. *High School Journal*, 49, 358-362, 1962

Allen, D.W. and J.C. Fortune. An analysis of microteaching : A new procedure in teacher education. In *micro-teaching* : *A description.* Stanford : California School of Education, Stanford University, Section III, 1-11, 1967

Allen, D.W. and K.A. Ryan. *Microteaching*. Reading, Mass., U.S.A. : Addison Wesley Publishing Co., 1969

Chaudasma, R.A. Trying out of microteaching procedure in student-teaching. Unpublished M. Ed. dissertation, M. University, 1971

Marker, M.S. A report on an experiment in developing skills of classroom teach. ing in student-teachers by simulation and new technique of supervision. *Journal of Gujarat Research Society*, Bombay, 34, 1972

Passi, B.K. (Ed.) *Becoming Better Teacher* (*Microteaching Technique*). Ahmedabad, 1975

Singh, P. The dynamics of a question. *NIE Journal*, New Delhi, Vol. 6, 4, March 1972

Steinen, R.F. An exploratory study of the result, of providing increased feedback to student-teachers of mathematics. Ann Arbor : Mich. University, *Microfilm*, 1967

Typical Patterns of Verbal Behaviour of Successful Secondary School English Teachers

N.N. PANGOTRA
Lecturer, Punjabi University, Chandigarh

WHO IS A successful teacher? Perhaps this question has engaged more attention from ancient times till today than any other educational topic. Nonetheless, we are without a suitable answer to this question and we canot tell good teachers from bad teachers. Biddle and Ellena (1969) said that "The problem of teacher effectiveness is so complex that no one knows today what the competent teacher is. Hamachek (1971) says that "it is a sad commentry about our educational system and we do not know what the competent... or effective, or good, or successful, or whatever you care to call him... teacher is."

Many researchers probing teacher effectiveness have studied the implications of teacher's personal characteristics, instructional procedures and interaction styles, perception of self and perception of others in this regard and come out with some concrete proposals. Heil, Powell and Fiefer (1960) compared various teacher-pupil personality combinations and found that healthy, well-rounded and flexible teachers were most effective with all types of students. Ryans (1960) conducted a number of studies and concluded that a good teacher has been observed to be warm, understanding, friendly, responsible, systematic and businesslike ; the poor teacher is aloof, egocentric, restricted, evading, slipshod and routine in his attitudes. Gage (1969) offered the following teacher behaviours as desirable on the basis of correlational or experimental evidence of their relationship with desirable outcomes or aspects of teaching : Warmth, cognitive organization, orderliness, indirectness and ability to solve instructional problems. Flanders (1960) found that classrooms in which achievements and attitudes were superior were conducted by teachers who did not blindly pursue a single behavioural path to the exclusion of others possibilities. Stern (1963) reviewed 34 studies and concluded that non-directive instructions have yielded better results.

Review of many more studies will reveal that no one pattern of teacher behaviour is superior to another under all conditions. It is little wonder that the research on teacher effectiveness is sketchy and in some ways, relatively inclusive. However, by and large, most research efforts aimed at investigating teacher effectiveness have attempted to probe one or more of the following dimensions of teacher personality and behaviour : Personal characteristics, instructional procedures and interaction styles, perception of self and perception of others.

It is quite possible to have two teachers of equal ability, intelligence, knowledge of the subject-matter and training but differing significantly in the results they achieve with the students. Some part of the difference can be accounted for some personal characteristics of the teacher and their typical behaviour styles. What kind of personality do students respond to ? It is to this end that the present study has been taken up. The present inquiry has been stated pinpointedly as follows : Typical patterns of verbal behaviour of successful secondary school English teachers.

Definition of the Terms

The terms, 'successful teacher' and 'verbal behaviour' have been defined as follows :

Successful Teacher : A successful teacher is one, who (*i*) achieves above-average results in the subject taught, (*ii*) gets a high score on principal's rating on teaching effectiveness scale and, (*iii*) gets a high score on pupil's rating efficiency scale.

Verbal Behaviour : It means the verbal interchange that goes on in the classroom between the teacher and his pupils and between a pupil and pupils.

Objectives

The objectives for undertaking the present study are :

1. Identification of successful teachers of English n the secondary schools.

2. To study the verbal behaviour and interaction styles of successful teachers teaching English to the secondary classes.

Instrumentation

The following tools have been made use of in the present study :

1. Principal's rating scale of teacher effectiveness.
2. Pupils's rating of teacher effectiveness.
3. Flanders' interaction analysis category system for studying verbal behaviour.

Description of the Tools

Principal's rating scale on teacher effectiveness : It is a self-made three-point scale with 24 statements. The statements were prepared in consultation with over 100 experts drawn from the colleges of education, directorate of education and school principals and teachers. From the 37 items of the original draft, only 24, where the agreement was 75 per cent or more, were retained. The scale is attached in Appendix I.

Pupil's rating scale on teacher effectiveness : It is also a self-made three-point scale, attached in Appendix II. For the development of the scale about 800 students (senior) from 15 high/higher school were requested to select from all their present and past teachers the one they liked most and give three-five reasons for their choice. The returns were summarized and 20 most frequently described items were selected for this scale.

Sampling

The study began with 150 teachers teaching English to the high classes. On the above-quoted criterion only 42 could qualify. Each of the 42 teachers that comprised the sample was observed on two different occasions, first teaching prose textbook, later teaching English composition. Each observation was of 20-25 minutes' active interaction. The tool used was Flanders' interaction analysis category system.

The Data

The norms of behaviour in respect of successful English teachers have been found as follows :

	Per cent
Teacher talk	71.77
Pupil talk	15.25
Silence or confusion	12.98
i/d	1.20
I/D	0.71
Teacher response ratio (TRR)	65.42
Teacher initiative ratio (TIR)	1.41
Teacher question ratio (TQR)	33.67
Pupil initiative ratio (PIR)	21.12
Flexibility	0.42
Content emphasis	80.50
Teacher steady state ratio	44.00
Pupil steady state ratio	34.44
Instantaneous teacher response ratio	88.00

Discussion of the Results

Proportion of Teacher Talk, Pupil Talk and Silence or Confusion

The proportion of teacher talk, pupil talk, silence or confusion are about 72, 15 and 13, respectively. Comparing these results with other researches and particularly the norms suggested by Flanders that are 65 per cent talk, 25 per cent pupil talk and 10 per cent silence or con usion, we may argue that the teachers in the present study have assumed a larger share of classroom discussions, pupil talk is far below the anticipated average and silence or confusion is more than what could be anticipated.

Comparison of Balance of Teacher's Response-Initiative with Pupil Initiation

Knowledge of the amount of teacher and pupil talk becomes more useful when it is combined with some index of quality. Normally there are reciprocal relationship between teacher statements and pupil statements. The more the teacher takes the initiative, the more likely pupils are to respond. The ratio of indirect to direct teacher influence is 1 : 0.71, and the per cent of indirect teacher talk is 41.46.

The i/d ratio is 1 : 20. It suggests more use of category 1, 2 and 3, and lesser use of category 6 and 7. This suggests that the teachers were responsive to the ideas and feelings of the students. They tried to soften the use of teacher authority by making it more reasonable, understandable and less arbitrary. The I/D ratio and i/d ratio have been used previously to describe interaction data. These indices are not very stable and cannot be used to get a parsimonious picture of the balance between initiation and response.

The teacher response ratio (TRP) corresponds to the teacher's tendency to react to the ideas and feelings of the pupil. A good average index of TRR is estimated to be 44, and in the present enquiry the index is above 65. It suggests that the teachers responded to the pupil talk more often than the normative expectations. The i/d ratio corroborates the above conclusion. The teacher question ratio (TQR) in the present study is about 34. Normally we would expect the average TQR to be close to 26. An above-average value represents the tendency of the teacher to use questions when guiding the more content-oriented part of the class discussion. The pupil initiative ratio (PIR) in the present study is about 21. Normally we would expect this index to be around 35. The present study suggests that a lower proportion of pupil talk was judged to be an act of initiation.

Combining the three indices, TRR, TQR and PIR, it may be argued that the teachers in the present inquiry are responsive to pupil talk, have a tendency to use more questions when guiding the content-oriented part of class discussion.

Pupil initiative in introducing their own ideas into classroom discourse is lower than the normative expectations and most of the pupil statements are in response to teacher questions asked and directions given from time to time.

How does the Teacher React when Pupils Stop Talking

The instantaneous teacher response ratio (TRR 89) is around 94 in the present study that suggests a very high tendency on the part of the teacher to praise or integrate pupil ideas into class discussion as compared to their tendency to criticize pupil ideas, at the moment pupils stop talking. Further, the instantaneous teacher question ratio (TQR) is around 80 in the present inquiry. It is an above-average index which is normally expected to be around 50. It suggests that teachers were much more likely to move on to a new question compared to lecturing immediately after pupils stop talking.

Emphasis Given to Content

The content cross-ratio is 80. We would normally expect it to be around 55. A high index suggests that the main focus of class discussion was on the subject-matter. Attention to motivation and discipline problems was at a minimum.

Sustained Expression in the Same Category

The steady state ratio for the teacher is 44 and for the pupil is 34 in the present study. The normative expectation for these two ratios are 50 and 35. The values obtained suggest that rapidity of interchange between the teacher and pupil was around average or more precisely a little less than the average.

Answers to the Teacher Questions

The value obtained for this index is around 8. It suggests that only 8 per cent of the teacher questions were answered by the students. The drill index is also around 8 per cent suggesting that there were fewer opportunities for classroom drill directed by the teacher.

Flexibility or Stimulus Variation

The flexibility index in the present inquiry is 42. It is very close to the normative expectations. This suggests that successful teachers are in no way different from the average teachers so far as the flexibility in their teaching behaviour is concerned.

Conclusions

Successful secondary school English teachers' talk is above the normative expectations. They dominate the class discussions. The main focuss of classroom discussion is subject-matter. Attention to motivation and discipline problems is minimum though the teachers of the sample of study have exhibited comparatively a greater tendency to praise or integrate pupil ideas into class discussion than to criticize the ideas suggested by the pupils. They have tried to soften the use of teacher authority by making it more reasonable, understandable and less arbitrary. The teachers in the present study have demonstrated a greater inclination to respond to pupil talk with questions than to clarify, enlarge or develop pupil ideas.

The interchange between the teacher and the pupil is not rapid. Pupil talk is below average. Students have been found to be lacking in taking the initiative. Most of the pupil talk is in response to the teacher questions. Pupil talk found to be below average has been triggered only by the teacher questions. Pupils largely have not been able to answer the questions asked by the teacher. The teachers have not made use of their motivational skills to encourage pupil participation in class discussions and develop their initiative and creativity.

The silence or confusion prevailing in the classes taught by the efficient English teachers of the secondary schools is a little above the normative expectations.

References

Amidon, E.J. and Hunter, E. *Improving teaching*. New York : Holt, Rinehart and Winston, Inc., 1966

Anderson, H.M. Study of certain criteria of teaching effectiveness. *Journal of Experimental Education*, 23, 1954

Brar, A.S. Teaching competence. In W.S. Monroe (Ed.) *Encyclopaedia of educational research*. New York : Macmillan, 1950

Biddlle, J.B. and Ellena, J.W. (Eds.) *Contemporary research on teacher effectiveness*. Hclt, Rinehart and Winston, 1964

Bellack, A.A. (Ed.) *Theory and research in teaching*. New York : Teacher College Press, Columbia University

Bloom, B.S. (Ed.) Engelhart, M.D., Furst, E.J., Hill, W.H. and Krathwohl, D.R. *Taxonomy of educational objectives* : *The classification of educational goals*. Handbook I : *The cognitive domain*, Handbook II : *Affective domain*. Longmans Green, 1956, 1964

Bruner, J.S. *Towards a theory of instruction*. Combridge, Mass : The Belknap Press, 1966

Cogan, M.L. The behavior of teachers and the productive behavior of their pupils. *Journal of Expl. Edu.*, December 1958

Flanders, N.A. *Teacher influence, pupil attitude and achievements*. Final report. Cooperative Research Project No 397, University of Minnesota, 1960b

Flanders, N.A. Teacher effectiveness. In Ebel, R.L. (Ed.) *Encyclopaedia of educational research*. London : Macmilian, 1969

Gage, N.L. (Ed.) *Handbook of research on teaching*. New York : Rand McNally, 1963

Gage, N.L. Desirable behaviours of teachers. *Urban education*, 1965

Heill, M., Powell, M., and Feifer, I. Characteristics of teacher behavior related to the achievements of childern in several elementary grades. Washington D.C. : Office of Education, Coop. Research Proj. No. 397, 1960

Medley, D.M. and Klien, A.A. Some behaviour correlations of teacher effectiveness. *Journal of Edu. Psy.*, 50, 1957

Ryans, D.G. Research on teacher behaviour in the context of teacher characteristics study. In Biddle and Ellena (Ed.) *Contemporary research on teacher effectiveness*. New York : Holt, Rinehart and Winston, 1960b

Ryans, D.G. Prediction of teacher effectiveness. *Encyclopaedia of educational research*, 3rd edition. New York : Macmillan, 1960

Stern, G.C. Measuring non-cognitive variables in research on teaching. in Gage, N.L. (Ed.) *Handbook of research on teaching*. Rand McNally, 1963

Smith, B.O. and Meux, M.O. A study of logic of teaching. University of Illinois, 1962

Witty, P. An analysis of personality traits of effective teacher. *Journal of Educational Research*, May 1947

Wiseman, S. and Start, K.B. A follow-up of teachers' five years after completing their training. *British Journal of Educational Psychology*, 35, 1965

APPENDIX I

PRINCIPAL'S RATING SCALE ON TEACHER EFFICIENCY

Below are given some statements of traits and activities of the effective teachers. The items have been selected because of their importance and suitability. The particulars of the teacher who is to be assessed by you are given on the top. You are requested to rate him on a three-point scale. After studying the item write a '3' in the blank column, if the teacher is above average in that particular trait or activity, write a '2', for average and '1', if definitely weak.

Statements	*Rating*
1. Interest in profession, pupils and community	
2. Fearfulness, courage, fairness and independence	
3. Scholarship	
4. Originality and resourcefulness	
5. Leadership, initiative and self-confidence	
6. Cooperative, helpful and loyal	
7. Open-mindedness, progressiveness and ambition	
8. Fair in marking examination papers	
9. Good judgement, discretion and foresight	
10. Punctuality	
11. Accessibility to students	
12. Encourage pupil activity	
13. Contributes to group thinking and shares group responsibility	
14. Reads widely from professional literature	
15. Strives for personal enrichment	
16. Fosters contacts with the parents of the students	
17. Emotional stability to withstand minor annoyances	
18. Gives attention to group planning	
19. Does not complain constantly about others	
20. Takes interest in current educational, social and political affairs	
21. Encourages pupil initiative and creative work	
22. Tries to improve educational practice through experimentation	
23. Considers and avaluates the opinion of colleagues	
24. Seeks further improvement through in-service, correspondence and university courses	

APPENDIX II

PUPIL'S RATING SCALE ON TEACHER EFFICIENCY

Statements *Rating*

1. Friendly, cheerful and can take a joke
2. Explains the lesson clearly
3. Fair in grading, examinations and in handling discipline problems
4. Assists in your out-of-class problems
5. Accepts and respects the opinion of the class
6. Knows the subject and also how to teach it
7. Tries to make the class work interesting
8. Impartial, shows no favouritism and has no pets
9. Regular in giving and checking the assignments
10. Dictates well-prepared notes in the class
11. Uses punishments only rarely
12. Skillful in giving good examples
13. Uses simple language while teaching
14. Seeks to discover and provide for pupil needs
15. Provides opportunities to the class to express their ideas
16. His work is well planned
17. Revises the previous lesson before starting the next
18. Encourages pupil activity and initiative
19. Conducts special classes for the weak students
20. Fosters group feeling among the pupils ☐

Effectiveness of Skill-based Instructional Material Synchronized with Microteaching Approach in the Acquisition of the Skill of Illustrating with Examples

SNEHA JOSHI
B.N. BISWAL
Centre of Advanced Study in Education
M.S. University of Baroda

MICROTEACHING stands today as one of the few experimental techniques which by its very structure encourages a combination of theory and practice, research and training, innovation and implementation. It is defined as a system of controlled practice that makes it possible to concentrate on specific teaching behaviour and to practice teaching under controlled conditions. The microteaching technique could be called as a miniaturized classroom teaching as the complexity in teaching is reduced by having a small number of pupils, short duration of time, and the content being reduced to a single, simple concept. Each cycle of microteaching consists of teach-feedback-replan-reteach and feedback sections. Various studies abroad (Allen and Clarke 1967, Fortune, Cooper and Allen 1968, Emmen and Millet 1968, Davis and Smoot 1969, Limbacher 1969, Ward 1970, Wragg 1971 and Parrott *et al.* 1974) and in India (Marker 1972, Passi and Shah 1974, Joshi 1974, Abraham 1974, Bhattacharya 1974, Singh 1974, Vaze 1976, Lalitha 1977, Joshi 1977, Passi 1977) have justified the effectiveness of microteaching in training in different teaching skills. Yet, in order to develop teaching skills, there is a need for developing skill-based instructional material in Indian context. Hence, the present study.

Hypothesis

Student-teachers exposed to the treatment of skill-based instructional materials synchronized with microteaching technique for the 'skill of illustrating with examples' do not differ in the acquisition of this skill from the student-teachers exposed to the traditional teaching programme.

Sample

The sample for the experiment consisted of 25 student-teachers of the Faculty of Education and Psychology in the M.S. University of Baroda for the academic year 1975-76, teaching through English medium.

Tools of Research

The tools used in the present study were of two types: (*i*) tools developed for the experiment, and (*ii*) tools selected for the experiment. The tool developed for the experiment was an observation schedule for the skill of illustrating with examples. Tools selected for the study included: (*a*) Madhukar Patel's intelligence test (MPIT), (*b*) Ahluwalia's teacher attitude inventory (ATAI), and (*c*) Baroda general teaching competency (BGTC) scale.

Design

The experiment in the study was based on the parallel group covariance design. First of all, the intelligence test (MPIT) and the attitude inventory (ATAI) were administered to all the two groups, and the pre-experiment scores were obtained. These scores were used as covariates in the study. The experimental group consisted of 16 student-teachers and the control group had nine student-teachers.

Experimental Group (A)	Control Group (B)
N=16	N=9
Treatment T_1	Treatment T_2

The treatment T_1 included the use of instructional materials on the teaching skill of illustrating with examples, synchronized with microtechnique. The treatment T_2 included acquaintance with the technical skills of teaching, coupled with the traditional student teaching programme.

Microteaching treatment consisted of (*i*) a lecture on microteaching along with viewing the film in technical skills of teaching, (*ii*) study of the instructional material on the relevant teaching skill, (*iii*) training in observation and feedback, (*iv*) a model lesson given by one of the investigators on the particular teaching skill, followed by the discussion on the student-teachers' observation, and (*v*) the student-teachers themselves giving a complete cycle on the teaching skill. The important component in the various steps in providing the experimental treatment was the use of instructional material on the teaching skill. The instructional material was prepared by the investigators in two stages, namely, (*a*) preparation stage, and (*b*) try-out stage. After preparation of the first draft a try-out was conducted with a view to finding out content validity of the material. The sample for the try-out consisted of teacher-educators, research workers and in-service teachers. The suggestions were incorporated and the first draft was modified. This modified draft was used for the treatment.

The second stage of the study consisted of assigning student-teachers to two schools in Baroda city. Special care was taken in selecting two schools, namely, the Shreyas High School and Babyland High School. These two schools were located in two different corners of the city. The idea in selecting these schools was to prevent the student-teachers in the experimental and control groups, to discuss and interact about the treatment. This was to take care of the contamination effect in an experimental research.

The student-teachers gave four lessons. While they were teaching, the investigators along with trained observers, observed their teaching. Each one of the four observers including the investigators used one of the four tools mentioned earlier to assess the acquisition of different teaching skills, and the general teaching competence by using the BGTC scale. Similarly, experimental Group B was observed for four lessons on the observation schedule and the general teaching competence on BGTC scale. A final score on the skill and the general teaching competence was arrived for each student teaching by taking the mean score for the four lessons. The data were analysed by applying the statistical technique of analysis of covariance (ANCOVA). For ANCOVA the covariates were total scores on intelligence test, and attitude towards teaching. Tables 1, 2 and 3 present the computational details of the work.

TABLE 1

REGRESSION COEFFICIENT AND SIGNIFICANCE OF REGRESSION COEFFICIENT OF COVARIATES

Covariates	*Regression Coefficient*	*Standard Error of Regression Coefficient*	*t-value of Regression Coefficient*
IQ	0.18	0.08	2.14
Attitude	−0.01	0.05	0.39

TABLE 2

TESTING OF UNADJUSTED AND ADJUSTED MEANS BY F-TEST

Unadjusted F-test	*df (Factor Error)*	*Adjusted F-test*	*df(Factor Error)*
101.83**	1/23	95.45**	1/21

TABLE 3

SIGNIFICANCE OF DIFFERENCE OF ADJUSTED MEANS FOR GROUP A AND B

Group	*N*	*Unadjusted Means*	*Adjusted Means*	*t-value (Adiusted) between Groups*
A	17	44.44	45.40	9.77**
B	17	20.33	18.61	

**Significant at 0.01 level

From the tables it is seen that the unadjusted F-value (101.83) is significant at 0.01 level. When the criterion variable scores were adjusted for differences in IQ and scores on attitude towards teaching, the adjusted F-value (95.45) is significant at 0.01 level. Thus the hypothesis is rejected. This indicates that the experimental conditions for the two groups—experimental Group A and control Group B—produced differential efforts upon the criterion variable, i.e. 'skill of illustrating with examples'. On the basis of the results it can be concluded that the treatment given by instructional materials synchronized with microteaching technique resulted in higher acquisition of the 'skill of illustrating with examples' by the student-teachers of the experimental Group A, than those of control Group B exposed to the treatment T_2.

The above findings are supported by Allen and Fortune (1967). The study reports that student-teachers trained through microteaching approach showed significant improvement on six specific teaching skills, and performed higher level of teaching competence than a control group. Young (1967) reported higher acquisition of the 'skill of using examples' by the student-teachers with the use of modelling technique. Passi and Shah (1974) conducted a study using single group design. Microteaching technique was used for developing the 'skill of illustrating with examples'. The study revealed that microteaching was effective in developing the skill.

There can be several educational implications of this study which would provide certain guidelines for the educators. Considering that it can be stated that there are alternatives to the present-day student teaching programme. One such alternative is the use of skill-based instructional material synchronized with microteaching. With proper scheduling of time, providing laboratory training to all student-teachers is possible. Development of technical skills of teaching contributes to developing general teaching competence. Improving student teaching does not require additional financial input. It only requires mental efforts and an organizational acumen.

References

Abraham, P.P. Effectiveness of microteaching in the development of the skill of questioning. Unpublished M. Ed. dissertation, M.S. University of Baroda, 1974

Allen, D.W. and Clark, N.J. Microteaching : Its rationale. *High School Journal*, 51, 75-79, November 1967

Allen, D.W. *et. al*. Teaching skills for elementary and secondary school teachers. *General learning*, New York, 1969

Bhattacharya, S.P. Microteaching in the training of polytechnic teacher. Unpublished doctoral dissertation, M S. University of Baroda, 1974

Davis, O.L. and Smoot, B.R. Effects on the verbal teaching behaviours of beginning secondary teacher candidates' participation in a programme of laboratory teaching. Texas University, Austin, Texas, U.S.A., 1969

Emmer, E.T. and Millet, G.B. An assessment of terminal performance in a teaching laboratory : A pilot study. The Research and Development Centre for Teacher Education, Austin, Texas, The University of Texas, U.S.A., 1968

Fortune, J.C., Cooper, J.M. and Allen, D.W. Stanford summer microteaching clinic, 1965. *Journal of Teacher Education*, 18, 329-393, Winter 1967

Joshi, S.M. Effectiveness of microteaching as a technique in teacher preparation programme. Unpublished doctoral dissertation, M.S. University of Baroda, 1977

Joshi, S.M. Effectiveness of microteaching in developing the skills of reinforcement and silence and non-verbal cues in the student teachers. Unpublished M.Ed. dissertation, M.S University of Baroda, 1974

Lalitha, M.S. An enquiry into classroom instruction. Doctoral study in progress, M.S. University of Baroda, 1976

Limbacher, P.C. A study of effect of microteaching experience upon practice teaching classroom behaviour. Unpublished doctoral dissertation, University of Illinois, Urbana, U.S.A., 1969

Marker, N.S. Comparative study of microteaching and conventional practice teaching of pupil teachers of geography method. *Journal of Gujarat Research Society*, 34, 59-83, 1972

Passi, B. Effect of instructional material and feedback upon the development of certain teaching skills. Doctoral study in progress, M.S. University of Baroda, 1976

Passi, B.K. and Shah, M.M. *Microteaching in teacher education*. Centre of Advanced Study in Education, M.S. University of Baroda, 1974

Patton, V.G. The effects of six treatments on the ability of prospective secondary teachers to demonstrate the competency of varying the stimulus. *Dissertation Abstracts International*, 33, 9, 5013-A, 1972

Perrott, E. *et al.* A study of self-instructional microteaching systems. Lonsdale College, University of Lancaster, Bailrigg, Lancaster, England, January 1974

Sharma, K.K. Effect of different techniques of feedback upon the attainment of teaching skills related to stimulus variation among teachers. Doctoral study in progress, M.S. University of Baroda, 1976

Singh, E.P. Classroom interaction analysis, microteaching and modification of classroom teacher behaviour. Unpublished doctoral dissertation, M.S. University of Baroda, 1974

Thresiamma, T.V. Effect of feedback upon the teaching skills of teacher liveliness and recognizing attending behaviour. Unpublished M.Ed. dissertation, M.S. University of Baroda, 1976

Vaze, N A. Effects of modelling and microteaching in acquisition of certain skills in questioning. Unpublished doctoral dissertation, M.S. University of Baroda, 1976

Ward, B.E. A survey of microteaching in secondary education programmes of all NCATE, accredited colleges and universities. College of Education, University of Nebraska, U.S.A., 1970 (mimeo.)

Wragg, E.C. The influence of feedback on teachers' performance. *Educational Research*, 13 (3), 208-21, 1971

□

Ph.D. Theses Abstracts

Impact of Social Deprivation on Cognitive Styles of Primary School Children

(Smt.) M. PUSHPA
Department of Non-Formal Adult Continuing Education
Osmania University, Hyderabad

COGNITIVE style has attracted investigators with different theoretical backgrounds. More formally, cognitive style is defined as a stable, individual preference in mode of perceiving and conceptualizing the environment. Individuals do no take in and process information in the same manner. Confronted with the same, they approach and organize in different ways. A person who reflects ability to perceive objects apart from the context or deal with a field analytically is labelled as 'field independent' and who reflects dominance of perception of an item by the organization of the prevailing field, or relative inability to separate item from field, is considered as 'field dependent.' Further, the child's environment which includes family, school and social class influence the child's level of development. The contention being that due to socio-cultural deprivation, vast numbers of children and youth fail to develop normally which result in poor school performance.

***Thesis submitted to Osmania University (1980)**

****The publication of Ph.D. theses abstracts is financed by ICSSR, New Delhi.**

Objectives

Keeping in view the importance of the problem the following objectives were framed for the present study :

1. *a.* To ascertain cognitive styles of primary school children.
   b. To assess the level of cognitive abilities.
2. To find the impact of social deprivation on cognitive styles and abilities of primary school children.

Many factors play an important role in making a child field dependent or field independent. Environmental influences like family, school, social class, etc. must be taken into account in addition to the developmental trend. For that, age, sex, order of birth, school, grade, father's education, father's occupation, mother's education, religion, caste, income and size of the family were taken up for the study. Since the socially deprived children's conditions are completely different from the advantaged groups there is a need to study all the factors that influence.

Hypotheses

The following hypotheses were framed and tested in the present investigation :

1. Children with high level of deprivation tend to be highly field dependent.
2. Children who are highly deprived tend to exhibit lower cognitive abilities.
3. With increase in age children progress from field dependence to field independence.
4. Girls tend to exhibit higher field dependence than boys.
5. Children who are highly field independent, exhibit higher cognitive abilities.

Among different approaches towards identifying cognitive styles of children, Witkin's theory of field dependence, independence dimension was chosen. Thus, as already mentioned, our impression is that cognitive differences, in the broadest sense, is the extent to which experience is relatively articulated or relatively global.

Methodology

Since different types of schools cater to the needs of different socio-economic status children, a sample of 265 primary school children from semi-urban, rural, aided, government and private school children was selected. A small sample of tribal school children was included in the sample for comparison. It was assumed that the type of school that the children attend would reflect in learning and cognitive outcomes. Because some schools which are ill-equipped cannot provide an encouraging atmosphere for the child's development of cognitive abilities.

The following research instruments were used for testing the children's cognitive styles, abilities and deprivation level :

1. To ascertain the cognitive styles: (*i*) Draw-a-person test, (DAPT) and (*ii*) Children's embedded figures test (CEFT).
2. To measure cognitive abilities : (*i*) (*a*) Picture completion, (*b*) Kohs blocks design test, and (*c*) Object assembly test. (*iii*) Lorge-Thorndike tests, I and III levels.
3. To assess the level of social deprivation, prolonged deprivation scale developed by Mishra and Tripathi (1975).

Draw-a-person test (DAPT) reveals the extent of differentiation existing in the child. Children's embedded figures test (CEFT) requires the subject to recognize a simple design in a complex configuration. This task was viewed as tapping analytical ability. Similarly WISC sub-tests of picture completion, Kohs blocks, and object assembly measure the cognitive abilities in children. Lorge-Thorndike tests give the level of abstract reasoning and ideas in children. Thus all the tests measure the cognitive functioning of children in the problem-solving situation.

Prolonged deprivation scale covers several areas of life, namely, residential accommodation, home environment, economic sufficiency,food, clothing, educational experiences, childhood experiences, rearing experiences, parental characteristics, interaction with parents, motivational experiences, emotional experiences, religious experiences, and recreational experiences. The scale was adapted with some modifications in the items without change of meaning. Social deprivation was measured in terms of felt or experimental deprivation in children as expressed by them.

Summary of Findings

The results obtained on the above tests for different variables are presented along with discussion in a summary form as follows. The conclusions were drawn as per the findings.

1. When the independent and dependent variables were subjected to factor analysis, nine factors emerged with high loadings. In Factor I, school, father's education, income, residential accommodation, physical environment, economic sufficiency, food, clothing, parental characteristics, interaction with parents, and recreational experiences appeared in one cluster. All the cognitive variables, namely, cognitive styles, and cognitive abilities along with one independent variable grade emerged as one factor. Other variables like, sex, age, order of birth, religion, caste, father's occupation, mother's eucation or family size have not shown any importance. School, income and father's education were found to be highly related with deprivation.

2. Individual differences in cognitive styles have shown variations from the western studies. Our study did not support the hypothesis that girls are more field dependent than boys, i.e. there were no differences in their cognitive styles. The developmental trend has shown that children progress from field dependence with increase in age. The findings are in line with those of Witkin's studies. Hence our third hypothesis was proved that field independence increases with age.

3. Influence of grade was the highest in the development of cognitive styles and abilities, i.e. children with increase in their grade level, improved in field independence and also in cognitive abilities. Among the schools children of tribal, semi-urban, and private schools were highly field independent. Influence of parental background has shown father's education and income as highly important.

4. In cognitive abilities, older children have exhibited higher abilities than youngsters. The relationship between cognitive styles and cognitive abilities have shown that children who are highly field independent are higher in cognitive abilities. Thus hypothesis[5] was proved that children who are highly field dependent tend to exhibit higher abilities.

5. The impact of social deprivation on cognitive styles was found to be meagre. The correlation coefficients were not very high in majority of the areas. Hence our first hypothesis was not supported that children who are highly deprived are highly field dependent. Those children who were socially disadvantaged exhibited lower cognitive abilities. Especially children who were deprived in physical environment, food, clothing, residential accommodation, interaction with parents, and recreational experiences were lower scorers in cognitive abilities. Thus the findings reveal that children who are deprived in minimum requirements are deficient in cognitive functioning. Further, the results indicate that cognitive abilities are existing in the disadvantaged and not completely absent. But they have to be improved by proper training.

Conclusion

It may be concluded from the findings that social deprivation has no significant influence on cognitive styles of primary school children but on cognitive abilities.

The type of school, father's education, and income level contribute to the deprivation of the child. The children improved in their cognitive styles and cognitive skills with increase in their grade. In the type of school children of private schools were the highest in their abilities. Among the many factors of social deprivation, it may be concluded that, home environment, parental interaction, characteristics of the parents, food and clothing, and recreational experiences were found to be highly important.

Hence the results indicated that increase in years of schooling experience facilitate children's cognitive attainment. Hence proper compensatory programmes improve the children's level of cognitive development. No amount of incentives may prove worthwhile than better teaching standards and training the skills of children.

□

Concept of Speed : A Development-cum-Training Study

Updesh Kaur Bevli

Reader, Department of Educational Psychology and Foundations of Education, NCERT, New Delhi

The present investigation is based on Piagetian framework. Piaget had followed up a study of the genesis of the child's ideas of time with a consideration of the child's ideas of motion and speed. The general viewpoint advanced is that motion and speed are simple examples through which to study the gradual passage from perceptive intuition to the construction of operative systems. Moreover, attempts have been made by the researchers to accelerate the acquisition of Piagetian concepts by various training procedures. The implicit assumption in most of these experiments is that if a particular developmental change can be generated by the essential components of a given tranining procedure, then it is probable that this same change is regularly so generated in real life.

---

*Thesis submitted to Indian Institute of Technology, New Delhi (1978)

The Present Study

Based on the above formulation and assumption and using Piagetian theoretical framework, the present investigation developed two main foci, viz. :

1. To study the level of development of concept of speed in Indian children coming from different types of environments.
2. To see if a specially devised training can accelerate the acquisition of this concept among these children.

Fifteen hypotheses were formulated to cover the different aspects of the above-mentioned foci. Eight hypotheses were concerned with (1) above and studied the development in relation to school, age, sex, intelligence, and fathers' education, occupation and income. School, age and sex differences were also studied. The next seven hypotheses were concerned with (2) above and studied training in relation to school and age. School and age differences were also investigated.

For the above-mentioned foci (1) and (2) a factorial type of analysis on the basis of means was conducted. For (1) the three factors were : school (A), sex (B), and age (C) having 3, 2, and 3 levels, respectively, constituting a 3×2×3 factorial type of experiment. For (2) the three factors were : school (A), experimental groups (B), and age (C), having 2, 4 and 2 levels, respectively, constituting a 2×4×2 factorial type of experiment, and a pre-test-training-post-test experimental design was followed.

Following Gagne's (1962) hierarchy of task structure the *concept of speed* was broken into sub-concepts of *length* and *time* which were further sub-divided into elements. The tasks were designed on the letter and training was imparted in them by means of a specially devised apparatus.

Each training task was followed by the statement of a verbal rule by *E*. Pre- and post-tests were based on Piaget's original tasks. The number of subjects tested was 725, out of which 268 were given the training programme.

Main Conclusions

1. The development of the cognitive operations involved in the concept of speed among Indian children follow the same pattern as those of Genevan children studied by Piaget. However, differences are found in the ultimate level reached and the speed of development, depending upon the type of environment in which the child functions.

2. The results show a systematic delay of not only the rural children as compared to those of the city, but within the city also of socially disadvantaged as compared to those of socially advantaged. At least two-three years' delay is also seen of the advantaged group as compared with the western children. The reasons are to be located in the effects of schooling, urbanization and modernization.

3. School-wise analysis showed significant sex differences in the urban advantaged group. It is suggested that differences are more environmental and experiential.

4. Intelligence has been found to be highly correlated with the concept of speed.

5. Father's education and not income or occupation seem to be significantly correlated with the development of this concept. Mother's education, income and occupation are not so related.

6. The results for foci (2) based on detailed analysis indicated that the judgement as to the success of the training procedures adopted depends upon the criteria adopted. If we consider complete conservation from non-conservation as the criteria, then the training has not been effective. But, if we consider the improvement in level as the criteria than the training has been effective to a limited extent.

7. The concept of *time* seems to be a critical concept in teaching the concept of a velocity.

8. Teaching of two concepts *length* and *time* in one sitting leads to the retroactive effect.

9. The disadvantaged group find more difficulty in learning concepts involving abstract ideas. It is suggested that they may have difficulties with evocability and utilizability of an item.

□

A Critical Evaluation of School Textbook Improvement Programme in India

I. S. Chaudhri

Reader, Planning, Coordination and Evaluation Unit
NCERT, New Delhi

TEXTBOOK as a tool of education is a potential factor in determining the direction and quality of instructional strategies to be adopted by the teacher. It is a learning source and is used for maintaining and raising standards of education in planned manners. It is a type of reference material on the basis of which textbook lessons are drafted.

Textbooks suffer from several limitations. Certain books have been found to contain linguistic errors and faulty language or typographical errors which affect readability, create bad impression and lead to wrong learnings. Some textbooks have low quality of paper, printing, binding, illustrations and the like. Some textbooks present biased material which disturbs national harmony among people belonging to different religions, speaking different languages and having different modes of life.

Improving textbooks preparation was undertaken during 1950-70 as is clear from the investigations undertaken by Skilling (1951), Banerjee (1957), Maheshwari (1966) and Polas (1967). Attempts to improve textbooks in India and abroad may be inferred from attempts at textbooks surveys conducted in a number of countries. Improving textbooks through evaluation was still another attempt in the same direction undertaken during the third quarter of the present century. Textbook improvement by analysis was handled by Nietz (1952) and Gaind (1958). Textbooks improvement through evaluative criteria was undertaken by Wanchoo (1958), Rajanathan (1955) and Height (1951). Improving textbooks through the use of evaluation instruments was attempted by Morton (1952) and Nietz (1960). Subject textbooks were evaluated for improvement by Gaind (1959), Chabe (1966), Sumerline

---

*Thesis submitted to the Punjabi University, Patiala (1977)

(1966) and Blome (1967). Textbooks improvement through researches has been attempted by Ford (1952), Veerapa (1955), Rastogi (1970), and Kulshreshtha (1972).

The Union Ministry of Education set up the Central Bureau of Textbook Research in 1954 with the objective of improving school textbooks. The National Book Trust and the Children Book Trust were set up by the Government of India to publish books of national interest for school-going children and others. The National Council of Educational Research and Training took up the production of model textbooks, try-out of books on an experimental basis, and the development of conceptual literature for textbook evaluation. The Emotional Integration Committee (1961), the Indian Parliamentary and Scientific Committee (1964), Saiyidain Committee on School Textbooks (1966), the Education Commission (1966), the National Integration Council (1967), the National Policy on Education (1968), etc. were charged in quick succession to examine the problem of school textbooks with a view to improve them. The Government of India set up the National Board of School Textbooks in 1969 for the purpose of improving the books.

Review of Related Works

The historical development of school readers and of the method in teaching reading was investigated by Reader (1900). Old time schools and school books were examined by Johnson (1917). Selection of textbook was evaluated by Maxwell (1921), measuring textbooks was suggested by Spaulding (1922), and scientific evaluation of textbooks was advocated by Fuller (1928). New data on the typography of textbooks were collected by Buckingham (1931), criteria for determining the readability of type-faces were evolved by Tinder (1944), and typography and readability were examined correlatedly by Burt (1949). Clement (1939) developed a manual for analysing and selecting textbooks. Unesco seminar on textbooks was held in Brussels in 1960.

Textbooks in the orientation of education was stressed by Gupta (1960), role of textbook was defined by Chaudhri (1961), use of textbooks in examinations by D'Souza (1955), teacher-pupil planning in the use of textbooks by Khanna (1958), textbooks problems engaged Saiyidain (1955), and textbooks nationalization was analysed by Mukerjee (1955), Seshachalam (1957), Thathachari (1958), Shrimali (1959), De (1959), Patke (1959), Naik (1959), and Roy (1961). Analysis-sheet for the objective data in language textbooks for primary Classes I-V was developed in CBTR (1958). The NCERT during 1970-75 developed principles of textbook preparation and criteria for textbooks evaluation.

The Present Study

The present study has been made on the basis of the following assumptions:

1. Textbook improvement programmes lack direction and orientation.
2. Textbooks nationalization programmes have not achieved their objectives.
3. Existing tools and techniques of textbooks evaluation are inadequate for improvement purposes.

These assumptions formed the tentative hypotheses which were tested through critical reviews of textbook improvement programmes including the programmes of textbook nationalization and textbook evaluation. Examination of programmes undertaken by Union and state governments and researches conducted in universities and other research organizations paved the way for setting up of a detailed and objective criteria for evaluating different aspects of textbooks. A representative sample of textbooks produced under the textbook improvement programmes was then criterion-tested to bring out merits and demerits of the textbooks in use at present. This criterion-text was, in turn, used to determine the improvement indices.

The purposes of this critical evaluation of textbook improvement programmes in India were:

1. To assess the nature and extent of improvement in textbooks that the textbook improvement programmes have brought about.
2. To reveal the boottlenecks and hidden malpractices in the way of textbook improvement.
3. To assess the efforts of various textbooks agencies in writing, publications, production and revision of textbooks.
4. To determine the value of the existing textbook improvement programmes with a view to making these programmes more fruitful and productive.

The present study covered the following aspects of the problem:

1. Evaluation of the contributions on textbook improvement made by the Central Bureau of Textbook Research (1954-61), National Council of Educational Research and Training (1961-74), National Board of School Textbooks (1969-73), and Textbook Researches done in the universities (1953-73).

2. Evaluation of programmes handled by States and Union territories for improving quality.
3. Stock-taking of present series of textbooks.
4. An objective assessment of the advantages and disadvantages of textbook nationalization.
5. Evaluation of textbook preparation programme.
6. Evaluation of textbook production programme.
7. Examining textbook distribution programme.
8. Review of check-lists, rating-scales and questionnaires/opinionnaires used for selection, approval, etc. of books.
9. Examining the work done by the NCERT in developing conceptual literature for textbook evaluation.

Delimitation of the Study

Many programmes of textbooks improvement undertaken by private bodies and publishers have not been included. In this study only textbooks as such have been included and all other supporting literature has not been considered. Comprehensive evaluation involving the use of questionnaire and opinionnaire for user-students, classroom teachers, parents and supervisors, has been attempted in respect of a very small easily available sample. Field-tryouts of all school textbooks scrutinized in this report for empirical evaluation have not been attempted. This study is largely theoretical. Commercial practices have been only superficially mentioned.

Criteria of Evaluation

Basic considerations for the evaluation of school textbooks emerge from the principles of preparing them. Textbook principles involve decisions about basic prerequisites such as objective of the textbook, instructional objectives, approach to the subject, organizational pattern, scope of topics, etc.

The assessment of qualities of school textbooks can be done only through their detailed analysis. Analysis helps to evolve a set of norms highlighting both quantitatively and qualitatively the desirable features in conformity with which the textbooks are written. Analysis is to be characterized by objectivity.

At the simplest level, textbook evaluation is carried out in the form of an over-all review which is generally brief and global. Reviewing implies a thorough scrutiny of textbooks from various standpoints.

Subjective remarks and objective judgement may be two major approaches to textbook evaluation.

Rational or logical approach implies a detailed analytical study of the textbooks by experts. In empirical approach, the observations or reactions and their records provide information from the users. In comprehensive evaluation, all aspects of textbooks are considered by the evaluators. In elemental evaluation, the textbooks are evaluated from a particular viewpoint or taking into consideration one or two aspects only. Measurement and value judgement are two aspects of evaluation.

Characteristics of good evaluative criteria are worthwhileness, relevancy, adequacy, definiteness, specificity, practicability, consistency, objectivity and interpretativeness. The goodness of textbooks is very complex entity having large number of dimensions. So battery of instruments is needed to make evaluation comprehensive.

Some evaluation tools used are content analysis, schedule, rating-scale, check-list, opinionnaire and questionnaire. Evaluative criteria is divided into two main aspects of textbooks—academic and physical. Academic aspects consist of textual content, content organization, content presentation, textual language, instructional illustrations, textual exercises, and certain additional aspects. Physical aspects include textbook format, printing, type-size, typography, paper, cover page, binding and pricing.

Instruments of Evaluation

Textbook improvement programmes by the Central and state governments and textbooks agencies have been analysed and criterion-tested. Textbook nationalization programmes have been analysed into three well-demarcated steps of preparation, production and distribution. Textbook evaluation programmes have included examining of both academic and physical aspects. Sample textbooks of all states covering all the essential subjects and school classes have been evaluated with reference to an evaluative criteria available in different techniques and instruments.

Analysis of Textbook Improvement Programmes

A. Criterion-testing of textbook improvement programmes undertaken by the Central Government : CBTR, NCERT, and NBST.

B. Criterion-testing of textbook improvement programmes undertaken by state governments : Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Nagaland, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, West Bangal, Delhi, and other areas.

C. Criterion-testing of textbooks produced by textbooks agencies in: Telugu, Assamese, Gujarati, Malyalam, Kannada, Marathi, Oriya, Punjabi, Tamil, Bengali, Urdu, Bodo, Santhali, Nepali, English, Hindi, Sanskrit, mathematics, science, moral science, work experience, social studies, drawing, agriculture, domestic science, and technology.

Analysis of Textbook Nationalization Programmes

A. Preparation procedures : Preparation of a textbook involves (*i*) planning the textbook, (*ii*) content selection, organization and presentation, (*iii*) vetting the manuscript, and (*iv*) revising the manuscript. Generally three procedures are followed in the textbooks preparation under nationalization by the states: (*i*) inviting manuscripts from authors/ publishers, (*ii*) individual authors commissioned to write textbooks, and (*iii*) textbooks written by panels/committees of authors. Preparation of the textbook involves taking decisions about basic requisites such as (*i*) objectives of the textbook, (*ii*) instructional objectives, (*iii*) approach to the subject, (*iv*) organizational pattern, (*v*) scope of the topics, (*vi*) auxiliary feature designs, and (*vii*) cost range.

B. Production processes : Textbook production involves (*i*) designing, (*ii*) paper choosing, (*iii*) printing, (*iv*) production editing, (*v*) binding, (*vi*) pricing, and (*vii*) quality control. The designing of the textbooks is a broad term which includes such decision-making as format (size, shape), lay-out (leading, spacing, margins), type (size, face), and typography (titles, paras, lines). Textbook printing covers composing, page make-up, galley-proof, page-proof, and press work. Textbook binding covers folding, stitching, trimming, and covers. The cost elements in the production of a textbook consist of paper (50-60 per cent), printing (25-50per cent), distribution charges (15-20 per cent), compilation and editing charges (5-10 per cent) and establishment charges (5-10 per cent). Selling price of a textbook includes : (*i*) cost of preparation of manuscript or royalties for author, (*ii*) cost of art work and initial type setting, (*iii*) cost of production, paper and binding materials, (*iv*) stock and distribution expenses, (*v*) overhead charges and write-offs of publishing organization, (*vi*) Commissions to be paid to the booksellers, (*vii*) publisher's fallability losses; and (*viii*) profit of the publishers.

C. Distribution practices : Storage, sale, free supply textbooks, minority language books, selection, review and revision practices have been examined. Selection, review and, if required, revision of textbooks are prerequisites to distribution of non-nationalized textbooks prescribed or recommended to be used in the schools. Textbooks review is taken up for the purposes for press, for revision, and for research.

Analysis of Textbook Evaluation Programmes

A. Evaluation of academic aspects : Evaluation of academic aspects of a textbook includes content, presentation of content, language, illustrations, exercises, and certain additional aspects of prelimns and back pages. The academic aspects are taken care by the author and lend themselves better to qualitative evaluation.

B. Evaluation of physical aspect : Evaluation of physical aspects of a textbook includes format, printing, typography, paper, cover page, binding, and price.

C. Evaluation of sample textbooks : Evaluation of sample textbooks consisted of deciding evaluative criteria, designing evaluation techniques, and devising evaluation instrument. Scale values of various evaluative criteria in the evaluation instrument furnished indices of textbook improvement. Merits and demerits of sample textbooks have been identified. Aspects in which the books have met the criteria as well as the aspects in which the books fall short of the criteria, have been sorted out. Books considered to have met almost all the criteria as well as books found poor on the basis of the criteria, have been listed.

Main Findings

1. Attempts to improve school textbooks in India and abroad have been scanty.
2. The textbook improvement programmes lack direction and orientation.
3. The textbook nationalization programmes have not achieved their objectives.
4. The existing tools and techniques of textbook evaluation are too insufficient to bring improvement.

Steps for Streamlining Programmes of Textbooks Improvement

1. Manuscript evaluation should be taken up by content specialists, methodology expert, illustrator and testician.

2. An experimental try-out edition of the book should be tried out in a sample of schools before the textbook is deemed fit to be prescribed.

3. A critical review of the book should be undertaken with regard to both academic and physical aspects by an academician/educationist and production/publication expert.

4. Comprehensive evaluation of content, methodology, illustrations, exercises and physical aspects of the textbook should be had for every book before it is prescribed in schools.

Recommendations

Comprehensive evaluation of content, methodology, illustrations, exercises and physical aspects of the textbook is recommended for every book before it is prescribed in the schools.

No textbooks should be allowed to be used in schools unless it has gone through two measures of manuscripts evaluation and experimental try-out.

It should be obligatory for the publishers to have the school textbooks edited and reviewed.

Textbooks improvement indices, identified with reference to textbooks evaluation criteria by means of scores and ratings at five levels, could be taken up as textbook norms from which textbook standards could be developed to guide authors and publishers to write and produce better books.

Editing should be augmented by training the copy editors and devising a standard style manual.

Each textbook must be subjected to checking by a national agency to be set up for the purpose.

Textbooks improvement indices should be updated continually in the light of latest researches. Textbook norms, thus, could be periodically revised and improved.

Suggestions

Undating the content of textbooks could be a perennial exercise in the hands of researchers in curricular content.

The numerous instructional exercises need to be validated to cover all the salient content points and objectives.

□

A Study of Some of the Social-Psychological Factors Associated with Vocational Development

BISWANATH ROY

Reader in Psychology, NCERT, New Delhi

TO SOLVE the twin problems of survival and growth individuals are required to be in vocations and also develop themselves for such vocations, i.e. they require vocational development. The course of vocational development is determined by two important questions: (*i*) when it should occur, and (*ii*) under what context it should occur? As answers to these two questions we have (*i*) psycho-analytic theory, (*ii*) need theory, (*iii*) sociological theory, (*iv*) trait and factor theory, (*v*) life pattern theory. As a part of life pattern theory, Super's theory on vocational development has received the widest attention. He suggested 12 propositions and the present investigation is based mainly on the fifth, sixth, seventh and eighth propositions. Correspondingly it is related to the exploration stage (age 15 to 24 years) as one of the five vocational life stages.

Objectives

The principal objectives of the study were:

1. To study the effectiveness of Super's theory of vocational development under an Indian context.
2. To construct an instrument to measure vocational development in the form of vocational development index.
3. To find out the vocational development patterns of the school, college, university-leaving students corresponding to the tentative, transition and trial stages under exploration stage in Super's theory of vocational development.
4. To make a comparative study of the vocational development

---

*Thesis submitted to Indian Institute of Technology, New Delhi (1978) patterns of the three groups of students having different educational status.

5. To make a comparative study between these three groups in relation to some background, social and psychological variables with vocational development index.
6. To make a comparative study of (*a*) attitude towards education, (*b*) socialization, (*c*) characteristics preferred by the parents, as psychological variables *vis-a-vis* the vocational development of these three groups of students.
7. To make a comparative study of (*i*) residential status, (*ii*) religious affiliation, (*iii*) socio-economic status, as social variables *vis-a-vis* the vocational development of the three groups of students.
8. To make a comparative study of (*i*) academic achievement, (*ii*) birth order, (*iii*) future occupation, (*iv*) guidance for future occupation, (*v*) father's occupation as background variables *vis-a-vis* the vocational development of the three groups of students.
9. To predict the most probable variable that facilitates vocational development.
10. To find out the factors responsible for vocational development.
11. To attempt to redefine vocational development through this multivariate study.
12. To try to present a fresh model of vocational development as a result of this study.

Hypotheses

Review of earlier studies did not indicate much about the relationship between most of the background, social and psychological variables specially on Indian sample. As a result of which the hypotheses were fresh and were studied for the first time. The following hypotheses were tested :

1. Increase in educational status also increases vocational development. The tentative, transition and trial stages will show a gradual increase in the vocational development index.
2. The background variables may have some relationships with vocational development index. Since no earlier study could give any direction, the predictions about their rela-

tionships with vocational development were kept at null position.

3. The social variables will have (*i*) positive relationship with vocational development, (*ii*) will distinguish within their own levels, and (*iii*) will distinguish between the vocational development indices of the three types of students.
4. All the psychological variables will have positive relationship with vacational development for all the three educational status levels.
5. The factors responsible for vocational development (as obtained through the vocational development inventory) will have high positive correlations with vocational development index.

Plan of the Study

Variables: In all 12 main variables were considered for this study. Since many of them had several levels in each of them, it became a 26-variable study. The last variable being the criteria variable, i.e. the vocational development index. The remaining 25 variables were spread over three main heads, i.e. background, social and psychological variables. So, ultimately the study was based upon a multivariate model having 26 variables.

Instruments used: The study involved four instruments:

(*i*) Attitude toward education— Originally developed by Rundquist and Sletto, who intended to measure attitude toward the value of education or being educated. It is a 22-item Likert-type five-point scale having corrected split-half reliabilities of .84 and .85. High score (×5) indicated positive attitude toward the value of education.

(*ii*) Vocational development inventory—This inventory having 26 items and Likert-type five-point scaling was based upon six factors and was specially prepared by the author for this study for the vocational development index. Higher score (×5) indicated higher vocational development. The six factors were: (*i*) acceptance of existing thing, (*ii*) negative involvement, (*iii*) open-mindedness, (*iv*) scientific attitude, (*v*) cautiousness, and (*vi*) unconditional acceptance. The inventory has the corrected split-half reliabilities of .889 and .894.

(*iii*) Socialization scale—The scale was constructed by Edwards and had 39 items. The items from 1 to 30 keyed 'false' and from 31 to 39 as 'true'. The areas covered in this scale are: self-anxiety, conformity in controlling aggression, achievement, striving, tolerance of frustration, compulsiveness and unconventionality. The subjects are expected to state either true (T) or false (F) as per the applicability of the items in their own case. The scale was not factor analysed by the author, but it had high internal consistency.

(*iv*) Characteristics preferred by parents or CPP questionnaire: The CPP questionnaire was developed by Mishra. It contains 17 pairs of statements, each having two opposite characteristics. The individual respondent is asked to check one of the two characteristics which his parents would prefer out of the two given in each pair of statements. Factor-analytic study of the questionnaire evolved six factors: CPP (1), CPP (2), CPP (3), CPP (4), CPP (5), CPP (6). A seventh set of score was the total score on the whole CPP questionnaire which was symbolized as CPP (7).

Sampling design: The present study had three different populations belonging to school, college and university-leaving stages. The social variables were controlled for sampling purposes. The social variables were controlled through a 2 × 2 × 3 factorial design. The total sample (639) collected through stratified quota sampling from the Union territory of Delhi was: schools (222), colleges (213) and university (204).

Procedure: The students belonging to a particular institution or the other, were informed earlier to assemble in a room in their institution at a particular time and date. The questionnaires and the answer sheets were distributed among them. They were asked to fill in their replies and return them on the spot.

Data collection analysis: Data were collected from 639 students on all the background, social and psychological variables. The psychological variables were studied through the four instruments. The data thus collected were subjected to the statistical analysis.

Discussion

The first hypothesis was proved to be correct. There was a gradual increase in mean vocational development index with the increase in educational status. In case of the second hypothesis of five background variables, only academic achievement had positive and significant correlation with vocational development index. For the third hypothesis among the three social variables only socio-economic status variable was positively and significantly related to the vocational development index. Within the levels, the socio-economic status variable distinguished significantly (F-ratios) among all types of students. But it was confined to college students only for religious affiliation and residential status, whereas, in case of school students the distinctions were very high on religious affiliation only.

In case of the fourth and fifth hypotheses among the psychological variables, only attitude toward education and the six factors in the vocational development inventory were positively and significantly correlated with vocational development index for all the three types of students. In case of socialization, opposite trends were noticed in case of school (positive and significant) and university (negative and significant) students.

Conclusions

The following conclusions in brief can be made out of the review of the hypotheses for this study :

1. The more educated a person will be, the level of his maturity for vocational development will also be higher.
2. Until and unless there is a high and positively favourable attitude toward education as a whole, it will adversely affect the motivation for higher education and consequently higher vocational development.
3. Socio-economic status of the individual also influences the vocational development of both urban and rural students.
4. The psychological variables found as the six factors in vocational development inventory (acceptance of the existing things, negative involvement, open-mindedness, scientific attitude, cautiousness and unconditional acceptance) are also quite important. In fact, these factors can be treated as important parts of the socialization process. If these will be practised, they may help the person not only to have higher vocational development, but have a matured and adjusted personality.

□

The Effect of Knowledge of Results on Achievement of School Subjects in Relationship with Certain O-Variables

JAMNALAL BAYTI

IN ORDER to remove the fear of failure from the pupils, they should be given periodical tests throughout the session in natural settings. Students should be evaluated by their teachers occasionally for the part of the syllabus they complete in the class and as such, it will minimze the under-achievement and wastage. Some of the psychologists view that low degree of motivation is one of the factors responsible for under-academic achievement. The knowledge of results (KR) can serve as a good incentive to work hard and regularly. Comparatively KR is a new phrase in the psychology of learning. The underlying idea is that learning in school subjects may be facilitated when the learner is informed by his tercher at each setep about the progress he is making in his learning. The information of learning bears motivational aspect, so, it may be considered as a forceful factor to enhance learning. But, for this, pupils must be willing to make up their deficiencies in the light of the previous shortcomings. Thus, KR can guide the efforts and may help in further education.

Objectives

The main objectives of this study were :

1. To study if the knowledge of results (KR) brings in progressive improvement in the academic achievement of the pupils.
2. To study the effect of KR of earlier performance on the later academic achievement of pupils of various levels of intelligence.
3. To study the effect of KR on the academic achievement of pupils with different personality traits.
4. To study the sex-differences in the academic achievement as produced by the KR.

---

*Thesis submitted to Kurukshetra University (1975)

5 The subsidiary objective was : To study the effect of KR on the pupils' academic achievement in certain school subjects such as, mother tongue (Hindi), English, general science and elementary mathematics with regard to the levels of intelligence.

Collection of Data

The sample being purposive was drawn from the six higher secondary schools of Bikaner city, totalling 1,200 children. The sample was matched with regard to age, sex, personality, intelligence and socio-economic status. Two groups of children—one experimental and the other control—were used. The former was given periodical tests in the portion of the syllabus covered and the children in this group were told each time the result of their performance while the control group was not told about the result of their performance in similar tests given from the protion of the syllabus covered as in the case of experimental group.

Data for the study were collected in two phases. In the first phase, in the beginning of the session Cattell's fourteen personality factor questionnaire (junior 4 form) and Jalota's group test of general mental ability (1/60) were administered to the entire population totalling 1953 students. In the second phase, the records of the achievement of six successive tests in the four school subjects of the students of both the groups were obtained from the heads of the institutions in the last week of May.

Significant Findings

1. Boys of the experimental group improved their academic achievement with the help of KR which served as an incentive in all the six subsequent tests. Boys of the control group also improved but not in the same fashion.

2. Girls of the experimental group did better in their scholastic performance due to KR in all the subsequent tests, while there were fluctuations in the achievement of girls of the control group.

3. Boys of average intelligence of the experimental group achieved better with the help of KR which served as an incentive in all the subsequent tests while there were fluctuations in the achievement of the control group.

4. The girls of average intelligence of the experimental group did better in their scholastic performance due to KR in all the subsequent tests while there was deterioration in the achievement of the girls of the control group.

5. Boys of below-average intelligence of the experimental group improved their scholastic performance with the help of KR in all the subsequent tests while there were rise and fall in the achievement of such children of the control group.

6. Girls of below-average intelligence of the experimental group achieved better academically in all the subsequent tests with the help of KR while the achievement of girls of this category of the control group was found to be positive and in favour of experimental group of girls for the last three tests.

7. Boys of the following personality traits of the experimental group improved their academic achievement with the help of KR in all the subsequent tests, while the achievement of boys of these types of the control group was fluctuating : out-going, obedient, and tough-minded.

8. Boys of the following personality traits of the experimental group improved their academic achievement with the help of KR in the subsequent tests while there were fluctuations in the achievement of boys of the control group with these personality traits : reserved, assertive, sober, happy-go-lucky, disregarding rules, conscientious, shy, venturesome, casual, control, relaxed, tense, and extrovert.

9. Tender-minded and self-sufficient boys of the experimental group achieved better in their academic achievement with the help of KR in almost all the subsequent tests while the achievement of the control group was fluctuating.

10. Boys with traits of group-dependence, those affected by feelings and introvert boys of the experimental group scored higher academically in almost all the tests while there were rise and fall in the achievement of control group with these personality traits.

11. Boys with emotional stability in the experimental group achieved better in their scholastic achievement in some of the tests while there were fluctuations in the achievement of control group of emotionally stable boys.

12. The girls of the following personality traits of the experimental group improved their scholastic achievement with the help ef KR in all the subsequent tests while there were fluctuations in the achievement of girls of the control group : reserved, self-sufficient, extrovert, tense, venturesome, happy-go-lucky, assertive, emotionally stable, affected by feeling.

13. Girls of the following personality traits of the experimental group achieved better academically with the help of KR in all the subsequent tests while there were rise and fall in the achievement of

girls of control group : shy, relaxed, control, introvert, casual, group-dependent, tough-minded, conscientious, obedient, out-going, disregarding rules.

14. Sober and tender-minded girls of the experimental group scored higher in all the subsequent tests with the help of KR except that of sixth and fifth test respectively there were fluctuation in the achievement of such girls of the control group.

Educational Implications

1. The system of internal assessment will provide students with the needed motivation and stimulus to work regularly. Through periodical assessment students will imbibe the habit of working regularly. There will be no need of revising the full course of study prior to the commencement of the annual examination. They see themselves through the eyes of other people, adults and peers especially those psychologically close to them. The pupil has a healthier concept of himself, builds up sounder outlook on life and becomes more dynamic.

2. Periodical tests being one of the main features of internal assessment contain implications for teachers also. Through periodical tests, teachers will gain close contacts with their students. In order to prepare the students for tests, they teach regularly and correct the home assignments of the pupils intensively. They assess small leaflets of periodical tests based on the topic or unit they complete in the class for a particular period of time and thus, they will be relieved of the troublesome task of examining long scripts of annual and half-yearly examinations. The teacher gets himself in a position to diagnose the weak and strong points of his pupils' performance. If any student is found weak in a particular subject, the teacher locates the weak area. He tries to know the cause and adopts ways and means to remedy it. The teacher assigns specific exercises in order to remove the particular deficiency of the student. The teacher helps his pupils to improve his performance in weak areas by arranging remedial programmes.

3. Parents are also directly involved in the welfare of their sons and daughters. If they are in touch with the progress of their wards, they will plan their future accordingly. If the schools issue progress of their wards and enable them to know that their wards are lacking somewhere in the school programme, they may help their wards at home in their leisure time. They should be made known that home environment influences the teaching-learning process to a great extent. If need arises, they can consult the school authorities for the betterment of their children.

4. The evaluation record could also be used for the purposes of prediction as to what a particular student is likely to accomplish when he takes up a job or higher course of study.

5. Teachers evaluate their students in natural settings instead of giving them an annual final examination. And as such, the fear of examination disappears. Students become regular in studies and attendance and they complete the course at their own speed. This serves as one of the devices for minimizing wastage in education. □

Research Notes

A Study of the Examination System

RAMESH CHANDRA SHARMA

Centre for Educational Policy and Management
Administrative Staff College of India
Hyderabad

THE STUDY was designed to (*i*) compare the performance of students at traditional and semester examinations, (*ii*) compare the performance of students regarding their sessional marks at traditional and semester examinations, (*iii*) find out the relationship between sessional marks and final theory marks at traditional and semester examinations, and (*iv*) compare the quality of performance at traditional and semester examinations.

Assumptions

The following assumptions were tested :

1. There is considerable difference between the final theory marks at the traditional and semester examiantions.
2. There will be a positive relationship between final theory marks and sessional marks at semester system of examination.
3. The students' performance on sessional tests will be better at semester examinations as compared to traditional examinations.
4. The semester system of examinations promotes the quality of higher education.

Sample

The sample consisted of 179 postgraduate students (81 from traditional and 98 from semester examinations) from the school of Basic Sciences and Humanities, Udaipur. Two batches under the traditional system of examination (1967-69 and 1968-70) were selected and were compared with two batches that passed under the semester system of examination (1970-72 and 1971-73). Under the traditional examination, students of batch I belonged to the session 1967-68 (as M.Sc. previous students) and 1968-69 (as M.Sc. final students). Students of batch II belonged to the session 1968-69 (as M.Sc. previous students) and 1969-70 (as M.Sc. final students). The subjects selected were physics, chemistry, zoology and botany.

Data Collection

For each subject final theory marks and sessional marks were tabulated from college records for papers in each subject which were common at both traditional and semester examinations. The maximum marks in each paper were 20 and 80 for sessional and final theory respectively. Mean, percentage and chi-square were employed to analyse the data.

Findings

1. In traditional examination the range of mean final theory marks of physics was 40-50, 29-30, 40-41 and 33-46 in papers I, II, III and IV, respectively, while at semester examinations the range of mean marks of physics was 48-60, 32-46, 52-60 and 28-54, respectively in I, II, III, and IV papers. It was found that the range of mean marks in theory at semester examination was greater as compared to the traditional examination.
2. The range of mean final theory marks of chemistry was 38-42, 33-49, 41-45 and 33-33 for I, II, III and IV papers respectively at traditional examinations. The range of mean final theory marks of chemistry was 35-52, 36-48, 40-43 and 41-45 for I, II, III, and IV papers, respectively, at semester examinations.
3. The range of mean final theory of zoology of I, II, III, and IV papers was 38-40, 40-47, 40-41, 35-41 at traditional examinations and 37-42, 41-44, 41-47 and 41-50 at semester examinations, respectively.
4. The range of mean final theory marks of botany at traditional examinations was 33-36, 31-40, 32-35, and 37-41 for papers I, II, III,

and IV, respectively, while at semester examination it was 41, 41-40, 42-46, and 40-49 for paper I, II, III, and IV respectively.

5. The range of mean sessional marks of physics at traditional examination was 13-13, 10-12, 10-14, and 10-11 for I, II, III, and IV papers, respectively. The range of mean sessional marks of physics at semester examination was 13-13, 10-16, 10-14 and 13-13 for I, II, III and IV papers, respectively.

6. The mean range of sessional marks of chemistry at traditional examination was 8-12, 7-8, 9-9, and 9-10 while at semester examination the range of mean sessional marks of chemistry was 13-16, 12-15, 14-14 and 9-13 for papers I, II, III, and IV respectively.

7. The range of mean sessional examinations was 11-11, 11-14, 11-11, and 9-10 while at semester examination the range of mean sessional marks of zoology was 9-11, 12-14, 9-14 and 12-14 for papes, I, II, III, and IV respectively.

8. The range of mean sessional mark of botany at traditional examination was 9-9, 10-10, 8-11 and 9-11 while at semester examination the range of mean sessional marks of botany was 12-16, 11-11, 13-13 and 10-13 for papers I, II, III and IV respectively.

9. Chi-square calculated for physics, chemistry, zoology and botany were found to be not significant for traditional examination. The chi-square test determined for physics, chemistry, zoology and for botany were found to be significant at .10, .05, and .02 levels, respectively. It is a clear indication that the relationship between sessional marks and theory final marks was more significant at semester examinations than traditional examinations.

10. The number of mean percentage of first divisioners gradually increased from traditional examinations to semester examinations. The total mean percentage of first divisioners increased at semester examination in chemistry from 23 to 40 per cent. But the variation was not consistent for zoology where the percentage of first divisioners was poor at semester examinations and good at traditional examination. In botany the percentage of first divisioners was greater in semester examinations than in the traditional examinations. There was a consistent increase of first divisioners in the physics department, i. e. 40 in 1968-69, 43 in 1971-72, 67 in 1972-73 and 69 per cent in 1973-74.

Conclusions

The following conclusions can be drawn from the findings :

1. The mean marks in theory final examination was greater for

semester system of examinations in most of the courses as compared to the mean marks in theory final examinations at traditional system of examinations.

2. The range of mean sessional marks at semester examinations was greater than the range of mean sessional marks at traditional examinations.
3. The mean sessional marks was greater at semester examinations than traditional examinations in almost all subjects.
4. The relationship between sessional marks and final theory marks at semester examinations was significant for all the four subjects while it was not significant at traditional examinations.
5. The quality of performance was better in semester examinations than in traditional examinations.

□

Teacher-Educator Competency in Creativity

M.K. Raina
Department of Measurement and Evaluation, NCERT, New Delhi

V.K. Raina
Regional College of Education, Ajmer

Theoretical and research developments in the field of creative behaviour have reached to a level that now it deserves recognition as a distinct field within psychology and education (Barron 1969). The relationship of the educational processes with creativity has been studied in the last decade. Exciting to the teachers is the fact that certain instructional strategies are more effective than are others in producing creative responses in students. In fact, it has been observed (Stiles 1970) that as far as creativity is concerned, learning and teaching are closely intertwined—creative teacher performance tends to stimulate creative learning with the result that both teacher and student expand potentialities for creativity. Implications of creativity research for teacher education programme are of considerable value but much work in this direction is not available, though there are books which describe creative teaching (Gowan *et al.* 1967, Michael 1968, Torrance and Meyers 1970, Khatena 1978). Besides theoretical literature training programmes have also been developed to make teachers understand about creativity in education so that they are able to appreciate and identify the talent. Increasing emphasis is being placed on upgrading teacher's knowledge to bring them abreast of new findings on classroom practices to develop creative thinking (Williams 1968).

But a question of considerable significance raised is: Do the teacher-educators or teachers of teachers know sufficiently enough about nature, process, development of creative functioning ? Are they aware of the trends in creativity research ? This study attempts to answer this question.

Review of Research

Williams (1966a) reported a study of statements made on a questionnaire administered to more than five hundred teachers across the United States just beginning training. According to Williams (1966a), these teachers did not understand what is meant by the term 'creativity' and they had difficulty in identifying creative talent in classroom pupils. Eberle (1966) replicated this study and again found that teachers were unable to identify their most creative pupils. It was apparent that many pupils who have much creative talent go unnoticed in many classrooms. Williams (1964) designed another study based on the premise that the ability to identify creative pupils can be developed if teachers are exposed to what is known about the creative child and the creative process. Teachers were given training to help them understand the creative process and the creative individual. When teachers' selections before training were compared with their selections after training, a statistically significant difference between the choices was found. The Torrance tests of creative thinking, both figural and verbal, were used to assess pupils' creativity. The problem became one of orienting teachers to a working definition of creativity and training them to recognize the qualities of a creative child.

Using 'information awareness checklist', Williams (1968) found that the teachers in his study lacked knowledge about research findings and about the availability of new materials for developing creative thinking. He reports:

> When asked about desirable concepts on classroom practices for evoking creative thinking, however, this sample of teachers showed a great deal of insight They may be intuitive about sound classroom practice, even though they do not know the theory behind such practice.

That many teachers do not understand and are not yet prepared to cope with scholarly discussion of convergent and divergent thinking and complex concepts on pupils' intellectual abilities is reported by Abraham (1969) as well. He observes that many teachers are fed up with hackneyed discussions about identification, grouping, enrichment, acceleration, scope and sequence, but many of them don't comprehend much of it.

Since teacher-educators are in an advantageous position to influence the attitudes and motivations of student-teachers and make them aware about creative behaviour, it would be rewarding to study their awareness about creativity.

Purpose

In the light of the above, the purpose of this small study is to measure teacher-educators' knowledge of research findings and materials on creativity reported or developed during the last two decades or so. More specifically the study will try to answer the following questions :

1. Which aspects of creativity and creativity research teacher educators are least aware of ?
2. Which aspects of creativity and creativity research teacher-educators are most aware of ?

Method

Sample : In order to answer the questions posed above, the investigators used the 'information awareness checklist' (Williams 1966) with 45 teacher-educators serving in seven teacher education institutions in two states, namely, Madhya Pradesh and Rajasthan. Twenty-eight teacher-educators served in government colleges, 8 in private colleges, 6 in an institution run by an autonomous body and 3 in a college run by an university. Forty-three or 95.57 per cent of the total number of teacher-educators were holding master's degree in education. There were 2 or 4.43 per cent teacher-educators in the sample who did not possess any master's degree in education.

Instrument : Williams (1966 b) designed an inventory of 50 questions to measure teachers' knowledge of research findings and materials on creativity reported or developed during past ten years or so. The questions relate to research studies that have special relevance to classroom teaching. In this list of questions called an 'information awareness checklist', Williams asks teachers to respond in 'yes' or 'no'. A *yes* response indicates that the subject has knowledge about the question. A *no* response indicates that the subject has no knowledge about the question. The checklist includes questions on tests and teaching materials by Torrance; on models and writings by Guilford, Bruner and Bloom; on reports of Piaget's findings; on teaching materials developed by Suchman, Crutchfield and Parnes and general questions about divergent and productive thinking. Four questions were deleted from Williams' checklist, and in all, the inventory used here consisted of 46 questions.

Results

Table 1 lists in descending rank order the questions to which this sample of teacher-educators made a *no* response. The items indicate areas of knowledge about creativity that the teacher-educators are least aware of.

TABLE 1

RANK ORDER OF ITEMS ON INFORMATION AWARENESS CHECKLIST THAT TEACHER-EDUCATORS REPORTED BEING LEAST AWARE OF

Rank	*Items on Checklist*	*Percentage*
1.	Not heard of sensitivity training	97.78
2.	Not heard of inquiry training programmes; formal operations stage of intellectual development; research studies the "120 mental abilities of human intellect" comes from	95.56
3.	Guilford's presidential address to the APA	94.50
4.	Guilford's model of human intellect	93.45
5.	Image-craft productions of records to measure creative originality ; Berkeley studies on productive thinking	92.34
6.	Bruner's spiral curriculum	90.00
7.	Originality is behaviour consisting of verbal, figural, and symbolic transformations	88.89
8.	Relationship between creativity and achievement	87.73
9.	Elaboration of a part of divergent thinking	86.90
10.	Researches on creative thinking	84.85

Table 1 reveals that the teacher-educators are least aware of sensitivity training programme, inquiry training programme, formal operational stages of intellectual development, research studies of 120 mental abilities and Guilford's presidential address to the APA in 1950. 93.34 per cent of the sample teacher-educators are least aware of image-craft production of records, Berkeley studies on productive thinking and Bruner's spiral curriculum. Next in the rank order are the items like originality is a behaviour consisting of verbal, figural and symbolic transformations, relationship between creativity and achievement, elaboration is a part of divergent production, 84.85 per cent are least aware of researches in the field of creative thinking.

Table 2 reveals that the sample teacher-educators are most aware of the fact that their classroom needs innovations, that there is need for creativity research, that science can be taught to develop creative thinking same as writing, etc.

TABLE 2

BANK ORDER OF ITEMS ON INFORMATION AWARENESS CHECKLIST THAT THE TEACHER-EDUCATORS REPORTED BEING MOST AWARE OF

Rank Order	*Items on Checklist*	*Percentage*
1.	Think that classroom needs some new innovations	86.66
2.	Need for more creativity research	84.44
3.	Science can be taught to develop creativity same as writing	57.77
4.	Would know how to teach by the inductive approach	46.66
5.	Creativity is an universal trait	44.66
6.	Creativity is associated with problem-solving	42.22
7.	Desire to have pupils think divergently	40.00
8.	Expect pupils to be creative at the same time as learning subject-matter content	35.55
9.	Know what productive thinking is	31.11
10.	Know what critical thinking is	28.88

The results in Table 2 are encouraging in that the sample teacher-educators are inclined to change many practices in order to encourage innovation and change.

Discussion

The results after using creativity information awareness checklist administered to 45 teacher-educators of seven colleges of education of two states show that the sample teacher-educators, by and large, do not possess sufficient knowledge or they are not sufficiently aware about creativity and creativity movement in the field of education and psychology. The main reason of such a phenomenon may be that perhaps the teacher-educators have largely failed to keep abreast with the rapidly advancing knowledge in the fields of learning (Raina 1970). The results of this study have far-reaching implications for the continuing education of teacher-educators. Since teachers are in an advantageous position to develop potentialities in children, it is essential that some programmes be organized to train teachers and teacher-educators in the concept, identification and development of talent at various stages.

References

Abraham, W. Common sense and the talented. National Education Association, *Acent on Talent*, November 1966, 3

Barron, F. *Creative person and creative process*. New York : Holt, Rinehart and Winston, 1969

Eberle, R.F. Teaching for creative-productive thinking through subject matter content. *Experimental project* No. E-85. Edwardsville, Illinois, 1966

Gowan, J.C., Demas, G.D. and Torrance, E.P. *Creativlty : Its educational implications*. New York : John Wiley, 1967

Khatena, J. *The creatively gifted child*. New York : Vantage Press, 1978

Michael, W.B. *Teaching for creative endeavor*. London : Indiana University Press, 1968

Raina, T.N. Teaching the teachers. *The Hindustan Times*, February 1970

Stiles, L.J. Foreword. In Torrance, E.P. and Myers, R.E. *Cerative learning and teaching*. New York : Dodd Mead, 1970

Torrance, E.P. and Myers, R.E. *Creative learning and teaching*. New York : Dodd Mead, 1970

Williams, F.E. Reinforcement of originality. *Reinforcement in classroom learning*. U.S. Department of Health, Education and Welfare, Contract No. 2-10-010. Office of Education, September 1964

Williams, F.E. *Information awareness checklist*. St. Paul, Minnesota : Macalester College, 1966

Williams, F.E. Training children to be creative may have little effect on original classroom performance. *Californi a Journal of Educational Research*, 1966, 17, 73-79

□

Effective Cost of Education in Karnataka

MALATHI SOMAIAH
Research Fellow, Indian Institute of Management, Bangalore

ONE OF THE major problems of the developing countries. has been to provide schooling for all the children in the age-group 6-14. This problem has become more intensive in a country like India with a high rate of growth of population. Several schemes and programmes have been tried out to achieve 100 per cent enrolment at their school level and to overcome problems of drop-outs and stagnation in school education in India. This attempt is also to achieve the constitutional directive of providing universal compulsory education for children between 6-14 years.

This is an analysis to calculate and compare the effective cost incurred at elementary stage for four consecutive academic years (1974-79) in Karnataka. Effective cost is defined as the number of years spent per pupil for completing a given number of standards of schooling. The analysis follows the cohort method in which the simple market chain model is used for estimating effective cost. Therefore, the following assumptions were made for the analysis :

1. From any given standard a transition next year is possible only to that class (failure), or the next higher standard (promotion), or to stage eight (drop-outs).
2. There is no multiple entry which means anyone who leaves the system does not enter it again.
3. The assumption that matrix P is constant over time means that the probability of promotion (or stagnation or drop-out) from a given standard, is not dependent on the number of years a person has already spent in this class.
4. One of the IAMR research papers on 'Wastage in Indian school education—A review and further analysis' analyses some of

> the significant studies conducted in this area and report their findings. A close observation of these findings indicate a certain ratio of repeaters to drop-outs. To illustrate : the Poona study conducted by the Research Unit in the Directorate of Education, Maharashtra State indicates a drop-out rate of 10.5 for boys in Class II as against a repetition rate of 19.2 for the same class. Further, a drop-out rate of 8.3 in Class III has a retention rate of 18 for the same class, and this trend is continued for Class IV wherein a drop out rate of 7 in boys has a corresponding repitition rate of 16.

Such figures indicate that approximately for every one student who drops out of the primary school, two students would repeat the same class which gives a ratio of 2:1 for repeaters and drop outs. Another study conducted and published by Unesco titled *Statistical analysis of demographic and educational data for project school enrolment in India* provides the following repetition and drop-out rates for India in 1969-70 (p. 45) : The ratio of drop-outs is 0.117 against a repetition ratio of 0.202 for II std., this ratio comes to 0.185 for repeaters and 0.109 for drop-outs in III std. Further for IV std. the ratio is 0.171 for repeaters and 0.102 for drop-outs. These ratios substantiate the assumption that the repeaters and drop-outs are in the ratio 2:1.

Based on the above studies and in the absence of any data from the Statistics Department of the Office of the Commissioner of Public Instruction, Government of Karnataka, regarding the number of drop-outs and the number of repeaters in each class, the repeaters and drop-outs are worked out in the ratio of 2:1 for the seven years of schooling. This ratio has been assumed to hold good for all the four years under study since there is no indication of significant variations in the enrolment trends.

This model does not provide allowances for (*i*) direct admission to Class II and above from other states, (*ii*) mortality among students, (*iii*) students appearing at the end of Class VII to take the district level examinations as private candidates who were not in the school system either for 6 years or at the end of seventh year. No study has followed the cohort according to an explicit model separating clearly the repeaters, promoted and drop-outs and observing their impact in a dynamic way.

Methodology

The enrolment data was obtained from the Statistics Department of the Office of the Commissioner of Public Instructions, Government of Karnataka. From the table the number of repeaters and drop-outs from Class I to VII for the four years was calculated, e.g. the substraction of the total number of students in Class II in 1975-76 from total number of students in Class I in 1974-75 gave the number of repeaters and drop-outs.

The figures calculated were used to form the transition ratio matrix to apply the cohort method for calculating effective cost. The transition ratio matrices were obtained in the following manner. The ratios of (*i*) repeaters to the total in the class, (*ii*) the promoters to next higher class to the total in the . class, and (*iii*) the drop-outs to the total in the class were calculated and tabulated.

This ratio matrix A was subtracted from a (7+7) identity matrix and the inverse of this (I-A) matrix was calculated. This inverse is the expected number of years spent in the elementary education system by students. The product of the inverse and the last row of the transition ratio matrix (i.e. the drop-outs column) gives the proportion of puplis who ultimately drop out from each class of the elementary education system. The first row of the $(I\text{-}A)^{-1}$ matrix gives the total number of years spent by the initial cohort of 1000 students in each class (Row A).

The average number of years spent per pupil in a class by an initial cohort of that class is shown in the main diagonal of the $(I\text{-}A)^{-1}$ matrix (Row C).

The total number of pupils ultimately dropping out from each class is given by the first row of the $(I\text{-}A)^{-1} \times R$ matrix. The proportion of pupils ultimately dropping out from a cohort entering the class is obtained from the main diagonal of the $(I\text{-}A)^{-1} \times R$ matrix (Row E). The total number of pupils ultimately completing schooling in each class is obtained by subtracting subsequently—the total number of pupils ultimately dropping out from 1,000 (Row B).

Indices of Cost

These are presented in terms of number of pupil years required to produce (*i*) one functionally literate person who has completed Class IV of schooling and (*ii*) one person who has completed Class VII of schooling. (*i*) is obtained by dividing the sum of the first four elements of Row A by the fourth element in Row B. Similarly (*ii*) is obtained by dividing the sum of the first seven elements of Row A by the seventh element of Row B.

TABLE 1

INDICES OF COST IN KARNATAKA
(1974-75 to 1978-79)

Year	Number of Pupil Years Required to Produce			
	Functional Literate Person with Four Years of Completed Schooling		*Person with Seven Years of Completed Schooling*	
	Boys	*Girls*	*Boys*	*Giris*
1974-76	5.270	5.680	10.130	10.496
1975-77	5.290	5.890	9.940	11.280
1976-78	5.180	5.680	9.550	10.230
1977-79	5.040	5.440	9.310	9.706

Indices of Wastage

TABLE 2

INDICES OF WASTAGE IN PRODUCING ONE FUNCTIONAL LITERATE
(Percentage) (1974-75 to 1976-79)

Year	*Boys*		*Total*	*Girls*		*Total*
	Due to Drop-out	*Due to Stagnation*		*Due to Drop-out*	*Due to Stagnation*	
1974-76	10.55	21.20	31.75	14.00	28.00	42.00
1975-77	10.74	21.48	32.22	15.76	31.50	47.25
1976-77	9.84	19.66	29.50	14.00	28.00	42.00
1977-79	8.70	17.30	26.00	12.00	24.00	36.00

This (per cent) is derived by the simple formula

$$\left(\frac{\text{Index of Cost}-1}{4}\right)\times 100$$

for producing one functionally literate person, and

$$\left(\frac{\text{Index of cost}-1}{7}\right)\times 100$$

for providing one student with Class VII completed of schooling.

The indices of cost in Karnataka to produce one functionally literate person in 1977-79 is 5.050 for boys and 5.440 for girls whereas it was 7.965 for boys and 9.113 for girls 10 years ago in 1967-69.* Under ideal conditions the index of cost would be 4.00 for Class IV and 7.00 for Class VII where that is allowed to be no drop-outs and no stagnation is allowed.

TABLE 3

INDICES OF WASTAGE (IN THE PRODUCTION OF PERSONS WITH SEVEN YEARS OF COMPLETED SCHOOLING) (PERCENTAGE)
1974-75 to 1978-79

Year	*Boys*			*Girls*		
	Due to Drop-out	*Due to Stagnation*	*Total*	*Due to Drop-out*	*Due to Stagnation*	*Total*
1974-76	15.00	30.00	45.00	16.60	33.30	49.90
1975-77	14.50	28.90	43.40	20.36	40.78	61.14
1976-78	12.13	24.27	36.40	15.30	30.80	46.10
1977-79	11.00	22.00	33.00	12.88	25.77	38.65

The indices of wastage also indicate an improvement in the state when the figures for 1967-69 and 1977-79 are compared. There is a 33 per cent wastage to produce one boy who has completed Class VII of schooling and it is 38.65 per cent in the case of girls in 1977-79. The 1967-69 figures show 99.1 per cent wastage in the case of boys and 128.3 per cent wastage for girls.

Conclusions

1. There is a tremendous decrease in effective cost within tqe period of ten years which can be attributed to various incentive programmes by the state.
2. The effective cost of girls' education is higher than the boys' which can be remedied by (*i*) increasing incentives to encourage girls to remain in school, and (*ii*) make currricular programmes more relevant to the needs of girls, both urban and rural.
3. The higher percentage of wastage between Classes V and VII indicates that the curriculum must include work-experience and socially useful productive work.
4. The value that a student remain for three years in a school system, does not indicate any progressive trend that he had

---

**Source : Education and economic change in Kerala* by P.R. Gopinath Nair. The Centre for Development Studies, Trivandrum, 1978 studied up to Class III or so. On the contrary, a student might have stayed in the same Class for all the three years which cannot be distinguished from these indices. This limitation prevents one from making any further inferences.

Though this study reports a considerable improvement in the efforts made by the state in reducing wastage and stagnation, it also suggests the need to improve upon the schemes that are already in existence and to introduce more and more academic and skill-oriented programmes so that a child is not only attracted to stay longer in the school system but also to get the maximum benefit out of his stay. More and more innovative programmes and incentive schemes need to be developed for making the curriculum relevant and productive-oriented to meet the need of the students. Such studies need to be conducted on a longitudinal basis by selecting a few districts and collecting primary data from the schools regarding the actual number of promoters, repeaters and drop-outs. The same students need to be followed up for four or five years and this information has to be used in working out the indices of cost. Such empirical analysis may be useful in finding out ways and means of solving the problem of wastage and stagnation among the students in elementary schools.

□

Approaches for the Measurement of Self-Concept: An Introduction

R.K. Saraswat
J.S. Gaur
Educational and Vocational Guidance Unit, NCERT, New Delhi

PSYCHOLOGISTS in recent years began to realize that greater progress in understanding human behaviour can become possible through the study of the individual as whole. It is the concept of self which personifies the individual as a whole. The self-concept is the individual's way of looking at himself. It also signifies his way of thinking, feeling and behaving. The problem of measuring the self-concept to a large extent still remains unsolved. The difficulty in conducting research in such an area is that it is not very well-defined. Moreover, the nature of the thing under study is in a state of flux. Nevertheless, some real progress has been made, many of these conclusions are still on a speculative level only. The authors have tried to summarize hereunder some of the methods used by various researchers for measuring the self-concept.

The Dynamic Structure

Allport (1937) pointed out that no language offers a perfect catalogue of the elements of life. For this reason it has been a practice to use objective checklists in standardizing techniques for the assessment of self. Researchers interested in phenomenological reports have utilized a person's autobiographical statements about the self. Since this has turned out to be uneconomical, this method has not served the purposes. Even so it is time that the study of the self originated with the use of impressionistic and ancedotal methos. Thus Allport suggested to seek out the identity of dynamic mental structure and sub-structures and also to name them.

Adjective Checklist

Gough (1948) has favoured the use of adjective checklist in order to describe self in qualitative terms. Another derivative of this method is the sentence completion type of test such as "I am a man who——". In this type of test the respondent has to find an adjective appropriate to the completion of the sentence. In one or another form all these techniques attempt to present a qualitative picture of the individual by the use of adjectives.

Introspective Method

Hilgard (1949) disapproves the approach of asking a person to say what he thinks of himself. The rationale behind his disapprovement is that unconscious factors may distort the conscious picture of one's self. Hence Hilgard prefers the introspective method applied by the utilization of non-introspective material such as clinical interviews and the like.

The W-A-Y Technique

Bugental and Zelen (1950) developed the W-A-Y technique for the investigation of the self-concept. The respondents are asked the simple question "who are you?" This question is put thrice in succession. Three responses are then classified according to 17 categories such as age, sex, social status, name, occupation, etc. Differences in the self-concept are noted for objectively different groups. The older subjects conceptualize the self differently from younger subjects. The sex category was more frequently used by the younger as compared with older subjects.

Q-Sort Technique

Stephenson (1953) advocates a new methodology for the studying of the individual notions regarding himself. He maintains that a person can think and talk about himself as he goes about others. These self-reflections are as much a part of his behaviour as anything else that he may do. Stephenson has advanced a rationale and basic tools for the quantitative study of an individual's self-reflections. He has called this technique the Q-methodology for studying quantitatively a person's self-reflections. It is possible to view the Q-technique either as a "self sort or ideal sort".

In the Q-sort technique the card-sorting takes a place to describe oneself as he sees himself at the moment. The cards have to be arranged in order of preference with regard to the extent to what is described on them or on what he agrees to think of himself. In the later case, on the other hand, the cards are sorted to correspond with what one considers the ideal person to be. From the responses treated by the factor analysis and interpersonal correlations an assessment of the individual is made.

The Semantic Differential Technique

Osgood (1957) discussed a very useful method named semantic differential technique with the help of factorized bipolar adjectives. He has advocated the use of a scale to measure any concept relevant to the subject empirically. By deriving the activity expectancy and potency components he has discussed the way to arrive at the polarization of the concept : whether the individual holds a positive or negative attitude towards certain concepts. In this method the individual's attitude towards cognitive, emotional and social concepts can be a very useful source of information for knowing the individual's self-concept. Possibly there is little scope for conscious distortion in rating the concept since the individual's ego is not touched.

Personality Inventories

The interpretation of personality inventory responses in terms of self-conceptualization forms the basis of a provocative hypothesis formulated by Loevinger (1957). Bringing together many desparate findings from her own research and that of others, Loevinger proposes a personality trait which she defines as the capacity to conceptualize oneself or to assume distance from one's self and one's impulses.

According to Loevinger it is the manifestation of this trait in personality inventories that have been described in such terms as facade, test-taking defensiveness, response set, social desirability, acquiescence and personal style. In common with a number of other psychologists, Loevinger regards such test-taking attitudes not as instrumental errors to be ruled out rather as a major source of valid variance in personality inventories.

The Autobiographical Technique

Second and Backman (1964) gave the autobiographical technique. Researchers interested in autobiographical statements about the self ask the person to write about "who am I". The statements are then analysed according to a particular pattern. Another modified form of this technique is the use of statements which are employed in attitude questionnaires and personality inventories, e.g. I am good, I am powerful, I am smart, etc. Such statements do not differentiate between act and quality.

Inventories Developed in India

In India various researchers have developed self-concept inventories for measuring the self-concept. The authors have tried to summarize some of the main inventories.

1. *Svatva Sambodh Soochi* : The Central Bureau of Educational and Vocational Guidance (1964) developed the Svatva Sambodh Soochi for the guidance and counselling purpose. This is usable with high school students as also with all. The Svatva Sambodh Soochi is available in Hindi only. It is available in three forms—real self, social self and ideal self—each containing 54 items.

2. *Self-acceptance inventory*: Kakkar (1967) uesd a self-acceptance inventory to measure the adjustment and self-acceptance. The use of inventory is to measure the ability to accept the self-disparaging statements. The time-limit is about ten minutes. The inventory is used for high school and college students. The scoring system consists of simple counting of items checked.

3. *Self-perception questionnaire*: Mukerjee (1969) using the self-perception questionnaire studied the relationship between manifest anxiety test performance and self-rating. The split-half reliability as reported is .81.

4. *Hindi personality differential*: Agarwal (1970) developed a Hindi personality differential (HPD) which can be used for making meaningful profiles of personality-related concepts like I, myself. The time required for measuring the concept depends on a number of concepts used. On an average it takes one minute per concept and can be used for averages 15 and above. The HPD reports on factor scales consisting of conformity, tough-mindedness, normality and tenseness. The inventory could also probably be used as a general personality inventory for studying these dimensions. The scoring system is based on semantic differential type.

5. *Basavanna's inventory*: Basavanna (1971) conducted a study of self-confidence as an attitude of self-concept. The inventory can be uesd for college students and onwards. Inventory consists of 100 items to be answered either as true or false and can be scored easily. The higher the score the lower is the level of self-confidence and vice-versa. The reliability was found by split-half method to be 0.91 and validity by items validity for all the items. The scoring key is available as also the percentile norms of college students.

6. *Self-concept inventory*: Sagar Sharma (1970) developed the self-concept inventory. The inventory has no time-limit. The inventory is meant for high school students. It is available in both English and Hindi. The scoring keys are also available for this test. The reliability has been found by the test-retest method and the reliability coefficient as reported is .72. The content validity of the tool has also been reported.

7. *Self-perception inventory*: Kusum Bhatt developed the self-perception inventory to measure attitude towards self. The inventory is used for adolescents. The test-retest reliability and the split-half reliability are reported to be .48 and 0.91, respectively. The validity of the inventory is the correlation between the self-perception inventory and incomplete sentence blanks. The inventory is self-checking inventory consisting of 173 items to be checked on a three-point scale.

References

Agarwal, K.G. Personality dimensions as revealed by the Hindi personality differential. *Iudian Journal of Psychology*, 23-37, 1970

Allport, G.W. *Personality : A psychological interpretation*. New York: Holt, 1957

Basavanna, M.A. Study of self-confidence as an attitude of self-concept. Unpublished doctoral dissertation. Shri Venkateswara University, Tirupati, 1971

Bugental, J.F.T. and Zelen, S.L. Investigations into the self-concept. The W.A.Y. technique. *Journal of Personality*, 18, 483-498, 1960

Gough, H.G. A new dimension of status development of a personality scale. *American Social Review*, 13, 401-409, 1958

Hilgard, E.R. Human motives and the concept of the self. *American Psychology*, 9, 374-382, 1949

Kakkar, S.B. Adjustment and self-acceptance. *Manas*, 14 (1), 1967

Loevinger, Jane. Objective tests as instruments of psychological theory. *Psychological Report*, 3, 635-694, 1957

Mukherjee, B.N. A multivariate study of the relationship between manifest anxiety test performance and self-ratings. *Journal of Indian Academy of Applied Psychology*, 6(1), 8-21, 1969

Osgood, C.E., Suci, G.J. and Tannenbaum. *The measurement of meaning*. Urbana : University of Illinois Press, 1957

Second, Paul, F. and Backmen, C.W. Nature of self-concept. *Social Psychology*. New York: Mcgraw-Hill Book Co., 1964

Sharma, Sagar. Development of self-concept and its educational implications. *Rajasthan Board Journal of Education*, 4(1), 19-22, 1969

Singh, U.P. The self-concept of the criminals. *Psychological Studies*, 13(2), 118-126, 1968

Vasantha, Ram Kumar. Ordinal position in family, self-concept and achievement of college students. *Journal of Educational Research and Extension*, Vol. 8(4), 1972

□

The Effect of Perental Deprivation on Personality Adjustment: A Study of the Denotified Tribal Students

MOHD. AIJAZ KHAN

Senior Research Fellow, Psychology Department, Research Laboratory
Government Raza P.G. Cellege, Rampur, U.P.

PSYCHOLOGY studies man's behaviour in relation to his environment. Adjustment is an important characteristic of living organism. Not only normals but even abnormals try to achieve some sort of working arrangement with their environment. In the present study the term 'adjustment' is used in its conventional sense. It is recognized that adjustment is a continuous process, since every age and every situation calls for something new. The well-adjusted children have many interests, hobbies and achievements and their motives not to be grossly incompatible with each other. It has been suggested that effective mature adjustment involves broadening and deepening of interests. Although some adjusted persons may not be balanced in certain specific traits, these traits in their personality minimize this.

The conditions of human beings are constantly changing and he is confronted with various problems which he attempts to cope with, but many of them are beyond his capacity, even then from infancy to old age he is invariably engaged in trying to find out a satisfactory and pleasant adjustment with the problems by employing his intelligence and other gifts of nature.

Who are Denotified Tribes ?

Denotified tribes, formerly known as criminal tribes or currently addressed as Vimukta Jatiyan and still addressed as ex-criminal tribes present baffling problems to the students of criminology and social work in their efforts to study criminality prevalent amongst them. The study of denotified tribes is important because the tribal communities of India were in a state of isolation for many centuries and they led a life of their own, uninfluenced by the outside world. They were living in remote hills and plains both, surrounded by forest. Even during the British rule the tribal people remained segregated from the rest of the population. This isolation of the tribal people was responsible for the development of a homogeneous and closed society having a self-sufficient economy, their own customary laws, animistic attitude and also loyalty to their own village headman and chief leading to tribal solidarity.

In India the tribal people have traditionally been a neglected lot. Recently some of their children were kept in the government Ashram type schools and elsewhere. They generally showed many outstanding features. They showed characteristics of listlessness, unresponsiveness and general signs of unhappiness and quite a few of them showed secludedness. Such a state of affairs may be due to their peculiar attitude towards formal education or it may be due to the defective mental make-up of these children.

A full understanding of personality involves comprehension of the determinants, past and present, of the observed patterns of behaviour in individuals concerning cultural, social class, familial and genetic, constitutional determinants of personality. The relative contribution of one or another determinant may vary from person to person. In the area of familial determinants as a factor of parent-child relationships, Baldwin and his associates (1945) made a study in which parents were differentiated in their behaviour along a number of dimensions, and these differences in parental behaviour were related to striking differences in the behaviour of their children. Since Baldwin's study, research on parental behaviour and personality development has turned up a number of dimensions for describing parental behaviour and a variety of conclusions about the effect of each dimension. Parents are not viewed as one or the other, but rather as falling somewhere along a continuum defined by the two extremes. Thus parents with warmth would be accepting, affectionate and praising, whereas hostile parents would be critical and non-understanding.

A family plays the most significant role in personality development of a child. Personality includes the person, that is, what is shared with others. But personality also refers to what is distinctive about any person. Personality is the sum of a person's values (the object of his stricking, such as ideals, prestige, power and sex) plus his non-physical traits (his habitual ways of acting and reacting).

In the present study it is aimed to test the hypothesis that there is no relation in mean adjustment scores of normal (parentally undeprived) and denotified (parentally deprived) adolescents. In this research work only those children (adolescent students) are included who are institutionally deprived. Its effects are deleterious to personal adjustment, normal heterosexual development and control of aggressive and delinquent behaviour. Therefore, an operational definition of deprivation has been taken in the psesent study. 'Deprivation' has been equated with deprived children and deprived children are those, who are put in school hostels, i.e. Ashram-type schools, or other children who suffer the loss of either or both of their parents. The term 'deprivation' refers to the state of those children who are rejected or separated from their parents or suffer permanent loss of their parents through natural or circumstantial means. Deprivation arises from breakdowns in family structures resulting in orphaned or semi-orphaned children or in illegitimate children who, for one reason or another, are raised in institutions in adequate homes, or occasionally, in abnormal homes with relatives.

Review of Studies

When we set before ourselves the task of examining human behaviour, we come across a variety of personality differences underlying it. Differences are the pitch of life of our universe and without these all scientific quest will starve of its staple grist. Thus, it may be relevant to discuss certain studies to illustrate how some of the types and traits of personality and behavioural syndromes are dynamically inter-related with the deprivation. The findings of these studies are given below.

Beers and Obers (1950) observed in a sample of 38 adolescents that parental deprivation for eight weeks to three years made four as psychotic, 21 as character disorder, four as mentally retarded and two aspsychonebrotic. Only seven were judged to have achieved a satisfactory personality adjustment. Bowlby (1951) has pointed out that the extent and the quality of the damage varies with the age at which deprivation occurs, with the length of persistence, and quality of substitute care. Maximum deprivation seems to be during early infancy (3 to 6 months) which decreases beyond seven years (Gray 1958). Prugh and Yarrow (1961) stated that there is lesser mothering contact in institution as compared with ordinary home. There may also be lack of intellectual, emotional and social stimulation. Similarly, Provence and Lipton (1962) have compared the behaviour of children in institutions with that of children living in families. The institutionalized infants failed to show the personality differentiation. Das (1968) conducted a study on cultural deprivation. In this study the effect of deprivation was characterized as devastating.

Review of the above cited studies clearly indicate that no study is available in Indian context particularly in northern India showing the effect of deprivation on personality adjustment of adolescents. Hence, the present study was undertaken to go deeper into the problem to get some concrete results.

Methodology

The sample consists of 50 parentally deprived students of Classes IX and X and 50 day scholars (parentally undeprived) of the same age-group. The students of parentally deprived nature were taken from Government Higher Secondary (Ashram-type) School of Rampur city (U.P.), while undeprived subjects were selected from different schools of the same city by random method. The groups were matched on the variables of age, sex, educational standard and IQ as far as possible.

The IV of the study is parental deprivation and DV is adjustment scores. There are two groups : experimental group consisting of parentally deprived (denotified) students, and control group consisting of parentally undeprived (normal) students. The Ss of both the groups were of the same sex, i.e. male adolescents. Table 1 shows the homogeneity of the groups.

TABLE 1

MATCHING OF EXPERIMENTAL AND CONTROL GROUPS

S. No.	*Groups*	*N*	*Age*	*SD*	*CR*	*LS*
1.	Parentally deprived	50	14.25	3.20	0.43	NS
2,	Parentally undeprived	50	13.90	4.75		

Mittal's adjustment inventory was used as a tool for data collection. The test consists of 80 questions. It measures adjustment in four areas : (*a*) home adjustment, (*b*) social adjustment, (*c*) health and emotional adjustment, and (*d*) school/college adjustment. It takes 30 to 35 minutes in its completion. Answers are rated on a three-point rating scale : 'yes', 'no' and doubtful '?' Reliability of the inventory ranges between 0.50 to 0.99.

Results and Discussion

The entire procedure of data collection was conducted on the same day. Rapport was established before the actual administration of the inventory. First the data were collected from the deprived and then the undeprived sample, and adjustment scores of each type of subjects were calculated. After collecting the data statistical measures such as M's,SD and t-test were applied. Data with statistical measures are shown in Tables 2, 3, 4 and 5.

TABLE 2

SIGNIFICANCE OF DIFFERENCE IN HOME ADJUSTMENT OF PARENTALLY DEPRIVED AND UNDEPRIVED STUDENTS

S. No.	*Groups*	*N*	*Age*	*SD*	*GR*	*LS*
1.	Deprived	50	30.25	2.88	32.03	DS
2.	Undeprived	50	40.47	3.90		

TABLE 3

SIGNIFICANCE OF DIFFERENCE IN SOCIAL ADJUSTMENT OF PARENTALLY DEPRIVED AND UNDEPRIVED STUDENTS

S. No.	*Groups*	*N*	*Age*	*SD*	*CR*	*LS*
1.	Deprived	50	45.25	5.23	10.3	DS
2.	Undeprived	50	56.93	6.07		

TABLE 4

SIGNIFICANCE OF DIFFERENCE IN HEALTH AND EMOTIONAL ADJUSTMENT OF PARENTALLY DEPRIVED AND UNDEPRIVED STUDENTS

S. No.	*Groups*	*N*	*Age*	*SD*	*CR*	*LS*
1.	Deprived	50	42.23	6.25	10.8	DS
2.	Undeprived	50	57.35	8.55		

TABLE 5

SIGNIFICANCE OF DIFFERENCE IN SCHOOL/COLLEGE ADJUSTMENT BETWEEN PARENTALLY DEPRIVED AND UNDEPRIVED STUDENTS

S. No.	*Groups*	*N*	*Age*	*SD*	*CR*	*LS*
1.	Deprived	50	40.25	6.25	0.41	.01
2.	Undeprived	50	42.25	5.75		

LS means level of significance
DS means differ significantly

The t-test was applied to find out the significance of difference in mean adjustment scores of parentally deprived and normal students. Significance of difference was calculated in all the four areas of the adjustment which is shown in Tables 2, 3, 4 and 5, respectively. Table 2 shows that there is a clear-cut significance of difference in home adjustment of parentally deprived and undeprived students. Tables 3 and 4 also show that there is a clear-cut significance of difference in social and health and emotional areas of adjustment between the parentally deprived and undeprived students. The mean adjustment scores of the deprived are also low than the undeprived in first three years of adjustment as shown in Tables 2, 3 and 4. But both the groups do not differ significantly in school/college area of adjustments. Its main cause is the uniformity in school environment and curriculum in a democrat country like India.

Conclusion

The conclusion of the above study is that parental deprivation has an adverse effect on personality adjustment of the adolescent students. The adolescents who achieve adequate parental support develops a healthy personality adjustment, while the adolescents lacking parents' support shows no sign of attachment to any social person. They are least careful regarding their health, develops a sort of emotional apathy within them. Such differences are empirically found to be based on family situation, separation, rejection, parental domination, standard of living, lack of financial resources, needs and desires of the adolescents, lack of proper guidance and motivational resources, etc. The present findings corroborate the already established results of the studies.

References

Ainsworth, M.D. The effects of maternal deprivation : A view of findings and controversy in the context of research strategy. *WHO Reassessment*, 77-165, 1962

Baldwin, A.L., Kalhorm, J. and Breese, F.H. Patterns of parent behaviour. *Psychol. Monograph* , 58(3), 1945

Beers, D and Obers, S.J. The effects of extreme deprivation in infancy on psychic structure in adolescence : A study in ego development. In R.S. Eisslor (Ed.) *The psyco-analytic study of child*, Vol. 5, New York, 215-275, 1950

Bowlby, J. Maternal care and mental health, *WHO Monograph* Series, 2, 1957

Das, J.P. Cultural deprivations (Editorial). *Indian Journal of Mental Retardation*, 1, 1-3, 1968

Gray, P.H. Theory and evidence of imprinting in human infants. *Journal of Psychology*, 46, 155-166, 1958

Khan, M.A. The study of adjustment in relation to denotified tribes. Master's thesis in psychology, Agra University, 1973

Khan, M.A.,Sinha,V.,Gupta,G.S. and Saxena, J.K. Parental deprivation in relation to intelligence of denotified tribes. *Asian Journal of Psychology and Education*, 1, 38 40, 1976

Khan, M.A. Effect of parental deprivation on personality adjustment. Doctoral thesis, Agra University, 1976

Mittal, V.K. *Manual for adjustment inventory*. Psychology Department, Meerut College, Meerut, 1974

Provence and Lipton, R.C. Effects of deprivation on institutionalized infants. *Psychol. Anal. Study of Child*, 16, 189-205, 1962

Prugh, D.G. and Harlon, E.G. Masked deprivation in infants and young children in Deprivation of maternal care. Public Health Paper, 14

□

Book Reviews

The Search for Satori and Creativity

E. Paul Torrance. Creative Education Foundation, Buffalo. N.Y., 1979, pp. 204, $ 8.95

Satori is a Japanese word for which there is no equivalent in English. It represents a unique aspect of Japanese culture. Satori is the highest point attainable in expertness in any field of endeavour. It requires intense devotion, constant practice, concentration and absorption to the exclusion of other things, years of hard work, and generally it involves one-to-one relationship with a *sensei* (teacher). During his stay in Japan as a Visiting Professor in the Osaka City University, Torrance got the opportunity of observing the Japanese way of life at close quarters. He was impressed by satori and how it is inculcated in the people as the most desirable goal in life. Torrance has tried to relate satori to creativity.

This book was written in Japan though much of the data reported in it had been collected earlier in the U.S.A. In describing the skills needed for creativity Torrance has added 12 new skills. These skills are in addition to fluency, originality and elaboration. One chapter has been devoted to each skill in which the nature of the skill, its measurement, developmental trends, and methods of cultivating the skill have been discussed. The tests used are not new. Using Torrance tests of creative thinking the author has devised new methods of scoring the responses to derive measures of the twelve additional skills. These skills are : highlighting the essence, openness, emotional awareness, putting ideas in context, combining and synthesizing, visualizing, using fantasy, kinaesthetic and auditory responsiveness, unusual perspective, visualizing the inside, extending the boundaries, and humour.

Torrance has given his tests of creative thinking to 8,136 students from kindergarten to college classes. The test findings have been reported at ten levels, beginning with kindergarten then first grade to the sixth grade, each grade taken separately—junior high school, senior high school and college level. The sample sizes range from 272 at the college level to 1,983 at the third grade level. The mean scores for the first two skills, 'highlighting the essence' and 'openness' have been reported for each level beginning with the kindergarten and going up to the college students. For the remaining ten skills instead of giving quantitative measures only presence or absence of the skill is recorded by using a single plus (+) if the skill finds expression one or two times, and a double plus (++) if it is expressed three or more times. In reporting the results of these measures at different levels, Torrance has given only percentage of cases in which the responses showing the presence of the skill occurred.

Regarding the developmental trends, excepting for one skill 'extending the boundaries', in all the remaining skills the low[illegible] scores or percentages of presence of the skill are obtained by the kin *ıld Education,* [illegible]oup and the highest by the college students. Only in 'exte[illegible]ing [illegible] daries' the maximum percentage is achieved by the junior high school group followed by a decline for the senior high school and college students. The 'slump' at the fourth grade level which Torrance had pointed out in his researches in the sixties is seen in most of the skills.

Among the new skills 'kinaesthetic and auditory responsiveness' is similar to the 'movement' responses of the Rorschach test. The twelve new skills open up new areas for research. The various methods that have been suggested for cultivating the skills provide a valuable addition to the work that has been going on in this area.

The book brings us nearer to the understanding of creativity and its cultivation.

S.N. TRIPATHI, Regional College of Education, Bhopal

□

Thinking Thursdays

Language Arts in the Reading Lab. DONNA McKEE CLEARY (Reading Aids Series), International Reading Association, Newark, Delaware 19711, 1978, pp. v-87.

THINKING THURSDAYS is really unique in itself on two very important grounds : firstly, it is a single-author manuscript of special merit accepted as an official IRA publication and secondly, the descriptive nature of this book where theory has been happilly married to practice resulting in developing a comprehensive reading programme for secondary students. The volume follows a continuum from teaching decoding skills to dynamic thinking process. The book will serve as a 'reading aid' f[illegible] anyone establishing a secondary school reading labor[illegible] author has given a detailed description of how she st[illegible] the reading programme beginning 'from scratch'.

The volume will have an impact on the teachers who are interested in starting such reading programmes as the author has given a comprehensive personal account of the experiences after facing the challenges, working with will, sincerity, devotion and hard work. At no stage she got discouraged. She was given the responsibility of running a developmental reading course in a school where this was an elective open to students of grades 9-12, who scored one or two years below grade level on the California test of basic skills, administered throughout the district.

Being an elective it was bound to attract motivated students. The author concentrated on developmental skills, i.e. improvement of slightly below average reading comprehension, rate and vocabulary. The author had to deal with six groups of students in six school periods, each group having 15 students. She very soon discovered that what her students needed could not be administered in medical dosages. In fact they needed love, warmth and success—they needed structure, accomplishment and dignity. The author as a teacher for these students could provide all this. The room was nicely organized with racks, books and a file cabinet. It looked like reading resource room, neatly organized, colourful and alive.

The reading materials used were sequential, self-correcting, and valid when matched to a student's weaknesses and strengths. For this programme, the process of individually prescribed instruction, involving the assignment of specific remediation in areas of weakness as determined by standardized testing and continuous informal diagnosis was followed. Reading materials, appropriate to the needs of the students for purposes of motivation as well as content were carefully selected among the available reading materials. Within the scope of the materials used, the assignments were individualized. The programme was in the form of contractual agreement between the teacher and the students.

The programme centred round three areas of improvement—the vocabulary, comprehension and rate (the rate in this case refers to speed necessary to eliminate word-by-word reading to aid in the retention of the meaning of the beginning of a sentence by the time one gets to the end of the sentence). The students entered the room, conformed to the atmosphere of efficient productivity, took their assignment sheets and folders, selected the necessary materials, worked independently throughout the period, recorded their scores on the graphs and assignment sheets, returned their assignment sheets to the teacher and their folders to the file cabinet, and exited.

These students could decode the written language, could pronounce orally the printed word but they hated to read because they had never mastered the thought processes necessary for extracting meaning and significance from the printed page. They performed poorly in academic areas because they listened in the same inadequate way that they read. And they hated reading because the teaching of reading had been boring, punitive, judgmental, and isolated, with instruction seemingly aimed at some students' learning patterns but not at theirs.

Cleary is not satisfied with a reading programme which just emphasizes silent, individualized work. She very rightly asks : If students read unrelated selections (randomly of interest to them), answer the inevitable comprehension and vocabulary questions which trail along behind, and rarely discuss (if by any slim chance they thought it was worth discussing) what they have read with teacher or classmates, where in this pattern are we creating the joy of reading and the sense of purpose which will develop lifetime, independent readers ?

In fact these students needed to detect main ideas and supporting details ; to make comparisons and contrasts ; to organize information ; to determine cause-and-effect relationships ; to understand terms and concepts ; to analyse tone and intent ; to sequence ideas and events ; to discover relationships among facts, generalizations, and values ; to solve problems that require identification of the issue, consideration of causes of the issue, and evaluation of alternative solutions ; to make judgments according to designated standards. This programme devoted Monday, Tuesday and Wednesday for lab work. Friday was for conferences and games. And Thursday was deliberate, contrived thinking skills day. The teacher no doubt permitted discussion of responses with individuals wherever possible but on THURSDAYS she could guarantee the emphasis for each student would be THINKING. And the name of this volume rightly justifies the contents.

The students practised reading skills from simple to complex independently and with the help of the teacher—they discussed orally, they played reading games, they dramatized the plays by reading their parts aloud thus becoming better readers according to their maximum potential. The following conclusions were drawn by the remedial reading students :

> You can read better when words are in sentences.
> You can read pretty good without vowels.
> You can read faster by just looking at certain consonants.
> You can read faster by looking at whole sentences.
> If you already know something about what you are reading, you can read better.

The experiment was successful in the sense that the students enjoyed participating in it and also improved their reading skills and the teacher was happy that her efforts were fully rewarded. It was, as the author herself puts it, "As in all things, a balance that met their needs and my needs, that made the lab come alive with language, that made me eager to try again—next year."

The success of the reading programme mentioned in this volume proves that the teacher is the key to excellence in reading. The book is bound to inspire many who are eager to organize and implement better reading programmes for secondary school students.

PRAMILA AHUJA, Central Institute of Indian Languages, Mysore □

Journal of Higher Education

Published by the University Grants Commission to promote scholarly study, as well as discussion, of contemporary problems and policies in higher education.

The *Journal* welcomes notes from research in any discipline which may have implications for higher education and communications on any aspects of higher education, besides full-length articles or papers. Contributions in duplicate typescript and books for review (2 copies) may be addressed to the Honorary Editor. All editorial enquiries may be addressed to the Assistant Editor, *Journal of Higher Education*, University Grants Commission, 35 Ferozeshah Road, New Delhi 110001 (India).

The *Journal* is issued three times a year : Monsoon, Autumn and Spring.

Select Contents of Early Issues (Volumes I-V) include :

The University as Centre and Periphery, Indian Scientific and Technical Trainees Abroad, Foreign Aided Indian Institute of Technology Education, Image of Indian Journals Abroad, Faculty and Student Status in Administration, Regional Distribution of Technical and Higher Education, Attitudes and Beliefs of Harijan Students, Study of Conflict in a University, Student Unrest, Research on Examination.

Some Recent Contributors : Aqueil Ahmad, Philip Altbach, Somnath Chattopadhyaya, Martin Carnoy, Dhabatosh Datta, Gargi Dutt, Jacques Hallak, V. N. Kothari, Samuel Mathai, D. K. Nayar, D. Shankar Narayan.

Subscribers to the *Journal* will also receive a copy of the *Bulletin of Higher Education* published by the Commission three times a year. The *Bulletin* carries official information from the University Grants Commission.

Subscription Rates :

Annual : Rs. 20 (India), £ 3 or $8 (Foreign) ; Single copy : Rs. 8 (India), £ 1 or £3 (Foreign) ; for bonafide individual teachers and students in India, Rs. 10 per annum.

Sales enquiries may be addressed to :

The Assistant Educational Adviser (P)
Publications Sales Department
Ministry of Education and Culture
Room 503, 'C' Wing, Shastri Bhawan
New Delhi 110001

(*Contd. from cover ii*)

considers should be made known to a wider public. In such cases a copy of the publication in which the paper has appeared earlier should be sent with it.

Manuscripts sent for consideration should be typed double-spaced on one side of the paper only. References in the text to the work of other researchers should be made by giving the name of the researcher, and the year in which his research was published, in round brackets and *not* in the form of serial numbers which connect with the list of references at the end. Typescript in duplicate should be sent to the General Editor, and at least one copy retained by the writer for reference.

Tables, charts and graphs should be finalized carefully before sending. They should be clearly and accurately captioned and inked to size, and their places indicated in the manuscript.

Footnotes should contain complete information on author, title, place, and year of publication, publisher, and pages. References or bibliographies accompanying manuscripts should also be complete in all respects and should be arranged alphabetically.

A summary of the paper in not more than 500 words should be sent with each manuscript.

Contributions should be addressed to the General Editor, *Indian Educational Review*, Journals Cell, NIE Campus, Sri Aurobindo Marg, New Delhi 110016. □ □

Published at the Journals Cell by Shri V. K. Pandit, Secretary, National Council of Educational Research and Training, NIE Campus, Sri Aurobindo Marg, New Delhi 110016 and printed at Bharat Mudranalaya, Naveen Shahdara, Delhi 110032

R. No. 12912/66

JOURNAL OF INDIAN EDUCATION

For Teachers and Teacher Educators

A bi-monthly in English published by the National Council of Educational Research and Training, the *Journal of Indian Education* is an open forum for the discussion and evaluation of current trends, practices and policies in school education in our country.

The journal makes available to workers current enquiry in specific areas, to be used as source material for further research. The first issue (May 1975)covered 'A New Pattern of Education (10+2+3)'. 'Psychology in Classroom Setting', 'Women's Education in India', 'Teaching of History', 'Modern Maths in Schools' were covered later.

In our subsequent issues we covered educational research, and teaching of physics and life sciences in our schools. We also brought out special issues on 'Teaching of Literature in Schools' and 'School Libraries', among other relevant themes. Other issues are devoted to 'The Child and Education','Universalization of Elementary Education,' 'Teaching of Science and Maths', etc.

By keeping its readers abreast of the latest advances in education, the *JIE* promotes fresh thinking on all aspects of school education, and aspires to build up a milieu of objective discussion and criticism.

Write to: **The Business Manager, Publication Department, NCERT, NIE Campus, Sri Aurobindo Marg, New Delhi 110016, India.**